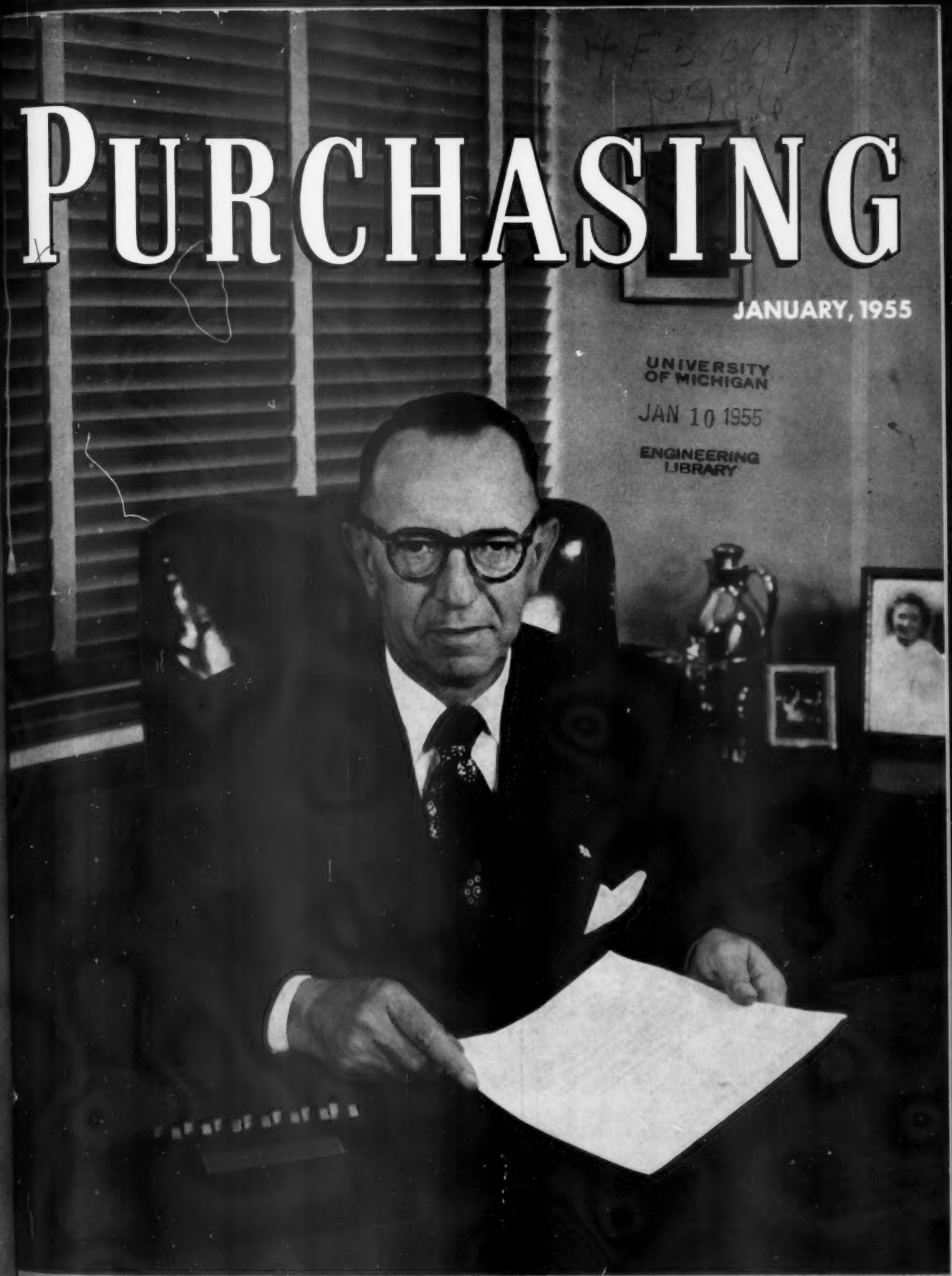
PURCHASING

JANUARY, 1955

UNIVERSITY OF MICHIGAN
JAN 10 1955
ENGINEERING LIBRARY

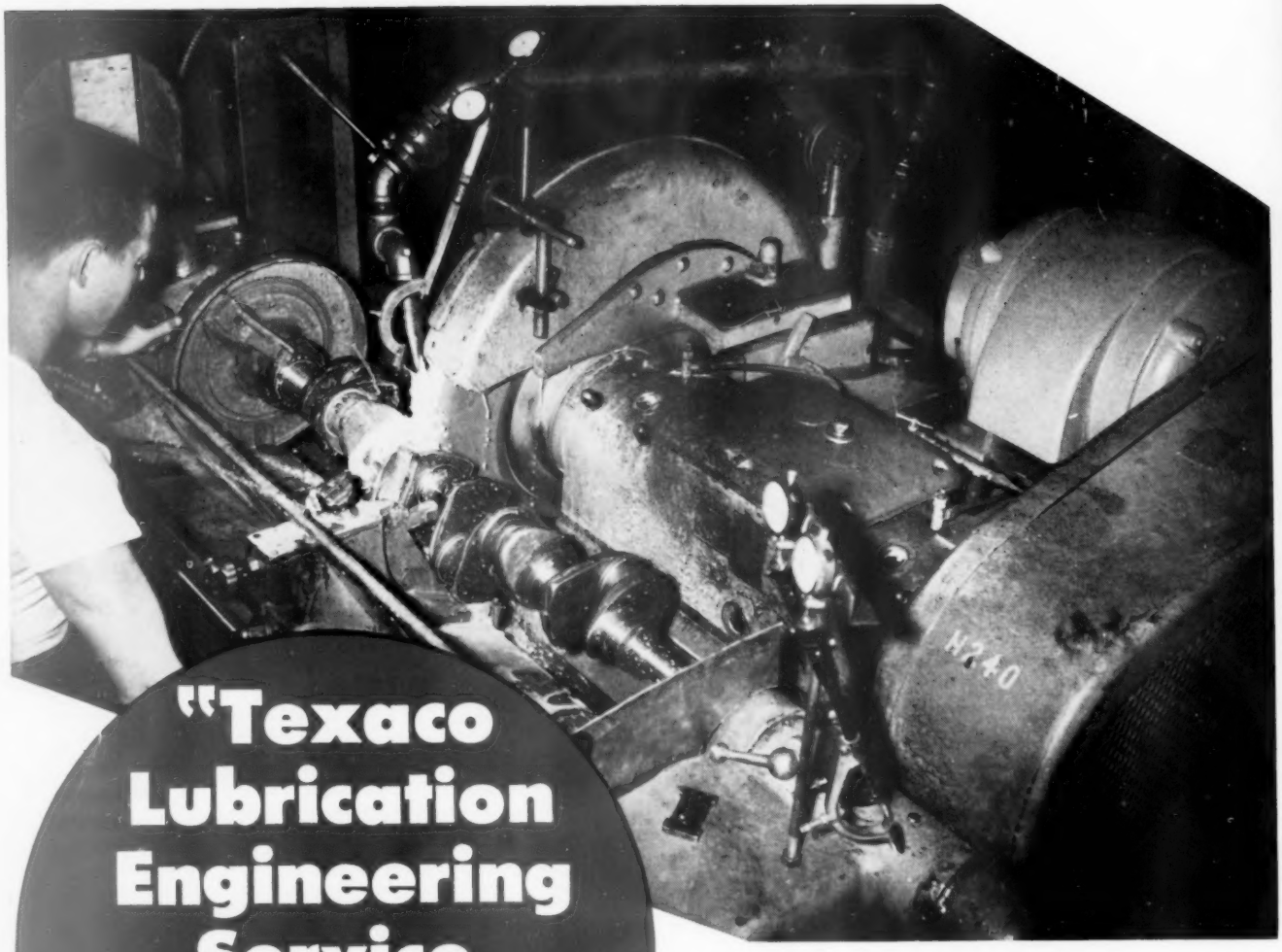


Phillips Petroleum's H. E. Kaiser—see page 77

TABLE OF CONTENTS—page 5

The Purchasing Agent Faces Reciprocity—page 81

A CONOVER-MAST PUBLICATION ..... 50 CENTS



"Texaco Lubrication Engineering Service is really 'on the ball'"

A LEADING crankshaft manufacturer has been using *Texaco Soluble Oil* on grinding operations for years. Results have been fine finish, freedom from rust, outstanding emulsion stability and exceptional cleanliness. But what is particularly liked is the service that goes with Texaco Products.

For example, when local water conditions changed, the Texaco Lubrication Engineer anticipated possible adverse effects from the harder water and recommended a different type of *Texaco Soluble Oil*. The manufacturer writes:

> **"We followed his advice and continued to get fine results. This is the kind of foresightedness in stopping trouble before it starts that makes me say that Texaco Lubrication Engineering Service is really 'on the ball'. We appreciate it, and I am sure your other customers do."**

Texaco Lubrication Engineering Service is available everywhere. Put it to work in *your* plant and benefit by increased production and lower unit costs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants, Fuels and Lubrication Engineering Service

TUNE IN: TEXACO STAR THEATER starring DONALD O'CONNOR or JIMMY DURANTE, on TV Sat. nights. METROPOLITAN OPERA radio broadcasts Sat. afternoons.

Eng Gen
HF
5001
P986

PURCHASING

The National Magazine of Industrial Purchasing

VOL. 38, No. 1 JANUARY, 1955

Objectives for 1955 65
The Purchasing Function ..... *E. S. Page* 69
Name Plates for Your Products ..... *R. D. Middlekauff and J. P. Japel* 71
Clearing the Order File of Minor Balances 74
PURCHASING Reports on Purchasing Opinion
What's the Business Outlook for 1955? 75
It's Inventory Time ..... *H. E. Kaiser* 77
Purchasing at Auction ..... *T. A. Dickinson* 79
The Purchasing Agent Faces Reciprocity ..... *C. F. Teeple* 81
Hectograph-Master System for Purchase Order Writing ..... *V. C. Vite* 84
Cost-Volume Relationships ..... *D. S. Ammer* 88
Stainless Steel by the Pound 90
Better Purchasing System for Distributor Items ..... *L. W. Moore* 93
Salesman's Guide 94
What the P. A. Wants from the Engineer in Standardization *W. R. Murray* 95
Standards and Purchasing ..... *S. F. Heinritz* 97
Phases of Purchasing ..... *J. C. Good* 99
Recovering Product Dust ..... *E. F. Anderson* 100
The Pulse of Business
Commodity and Business Trends 101
Precision Casting by the Frozen Mercury Process ..... *I. R. Kramer* 109
Non-Signers' Rights Under "Fair Trade" Agreements ..... *A. W. Gray* 112
For Better Requisitions ..... *A. L. Lehrbaummer* 114
The Key to Effective Conversation ..... *D. A. Laird* 117
Price Laws Don't Prohibit Bargaining ..... *L. T. Parker* 120
A Working System for Stock Control ..... *Ralph Rau* 166

MONTHLY FEATURES

Washington Report 13
New Information for Your Catalog Files 17
News of Your Suppliers 22
F. O. B. 28
Highlights 67
New Products — Ideas 128
Office Equipment and Supplies 165
Among the Associations 178
Personalities in the News 228
Industrial Developments 244
Buyer's and Seller's Mart 282
Letters to the Editor 284
Index to Advertisers 286

FREE INFORMATION SERVICE

To get further information on anything mentioned in this issue, use Reader Service Card opposite page 17

STUART F. HEINRITZ ..... *Editor*

B. P. MAST ..... *Chairman of the Board*
HARVEY CONOVER ..... *President and Treasurer*
A. M. MORSE, JR. ..... *Vice President*
A. H. DIX ..... *Vice President, Research*
RAY RICHARDS ..... *Publisher*
E. HOWARD ..... *Promotion Manager*

EDITORIAL STAFF

PAUL V. FARRELL ..... *Managing Editor*
G. H. GUTEKUNST, JR. ..... *Associate Editor*
DEAN S. AMMER ..... *Technical Editor*
A. N. WECKSLER ..... *Washington Editor*
A. W. WILLIAMS ..... *Contributing Editor*
L. E. MCMAHON ..... *Production Manager*
A. M. GRADY ..... *Production Assistant*
E. C. ARINK ..... *Art Director*
DAVID BURKE ..... *Associate Art Director*

ADVERTISING REPRESENTATIVES

ALEX G. GRAAM, Division Mgr. ..... *New York*
HARVEY CONOVER, JR. ..... *New York*
HUGH ROBINSON ..... *New York*
WAYNE W. GEYER, District Mgr. ..... *Chicago*
HUGH PELOTT, District Mgr. ..... *Chicago*
C. R. KINGSLEY, District Mgr. ..... *Cleveland*
DWIGHT JENNETT ..... *Los Angeles*
JOSEPH T. MCCOURT ..... *Detroit*

EDITORIAL AND EXECUTIVE OFFICES
205 East 42nd Street, New York 17, N. Y.

BRANCH OFFICES
737 North Michigan Avenue ..... *Chicago 11, Ill.*
1900 Euclid Avenue ..... *Cleveland 15, Ohio*
914 S. Robertson Blvd. ..... *Los Angeles 35, Cal.*
998 National Press Building *Washington 25, D.C.*
109 East Nine Mile Road ..... *Detroit 20, Mich.*

Published monthly by Peeave, Inc.
Subsidiary of
CONOVER-MAST PUBLICATIONS, INC.
Printed at Orange, Conn.

CONOVER-MAST PUBLICATIONS
PURCHASING
MILL & FACTORY
AVIATION AGE
CONSTRUCTION EQUIPMENT
INSTITUTIONAL FEEDING AND HOUSING
CONOVER-MAST PURCHASING DIRECTORY
CONOVER-MAST BOOK DIVISION

Copyright 1955 by Peeave, Inc., in the U.S.A

PURCHASING is an independent journal, not the official organ of any association. Established 1915 as "The Purchasing Agent". Consolidated with "The Executive Purchaser".

Contents are indexed monthly and annually by the Engineering Index Service.

Subscription rates: United States, U. S. Possessions, and Canada: $4 per year; elsewhere, $10 per year. Single copies, 50¢.

ABC NBP BPA

This fire was finally put out—but too late to avoid heavy loss of property.

DON'T be too late! There is a moment, in every fire, when a little water will do what an engine brigade may not be able to do ten minutes later. Practically every fire can be kept from turning into a disaster, by stopping it at the start. The sure way of doing that is the *automatic* way—with a Grinnell Automatic Fire Protection System.

Grinnell Sprinklers stop fire at its source, wherever and whenever it strikes, night or day, with automatic certainty. The experience of 77 years proves this. Now, with Grinnell Automatic *Spray* Sprinklers, you get even greater protection against fire. *Less water puts out more fire.* There is a Grinnell Fire Protection System for every fire hazard, and for every type of location.

Fire strikes without warning, and it may be later than you think. Get in touch with your Grinnell engineer, and let him advise you on the particular Grinnell System to protect *your* property. Grinnell Company, Inc., 273 West Exchange Street, Providence, Rhode Island.

Here is a partial list of the different fire protection systems which Grinnell can engineer to fit your particular need . . .

- **Standard Wet-Pipe Sprinkler System.** Where temperatures remain above freezing.
- **Standard Dry-Pipe Sprinkler System.** Where temperatures may go below freezing.
- **Multitrol System.** For faster application of water in extra hazardous areas.
- **Textile Opener Room System.** For flash fires in opened cotton bales.
- **Mulsifyre System.** For fires in heavy as well as in medium oils.
- **ProtectoSpray System.** For fires in light and medium oils—many special hazards.
- **ProtectoFoam System.** For fires in gasoline and other highly flammable liquids.
- **C-O-Two System.** For highly flammable liquids in enclosed spaces.

GRINNELL PROTECTION AGAINST EVERY FIRE HAZARD

Manufacturing, Engineering, and Installation of Automatic Sprinklers Since 1878

For More Information Circle No. 108 on Inquiry Card—Page 17

For More Information Circle No. 109 on Inquiry Card—Page 17→

January 1, 1955

NUMBERS GAME

Game of "What's Ahead in the Economy" continues to be the most popular sport among economists.

From Government sources comes a stream of optimistic forecasts. First such forecast was by Dr. Arthur F. Burns, chief of the President's Council of Economic Advisers, who said last summer that by 1960 the Gross National Product would be $440 billion a year. This compares with the GNP for 1954 of roughly $355 billion.

During the recent congressional campaign, President Eisenhower anticipated that in 10 years, the GNP would be $500 billion, and shortly thereafter the Joint Congressional Committee on the Economic Report talked about a total national output in 1965 of $535 billion.

All these numbers games are based on simple arithmetic. The rate of economic output in this country has shown an average increase of 2% a year over the years.

* * *

MORE JOBS

Here is how the bright side of the economy is built up:

In 1965 the population—based on 1950-'53 fertility rates—will have increased to 190 million.

Labor force will be 79 million—3 million in the military service will leave a civilian work force of 76 million. Unemployment will be 4%, or 3 million jobless. This will mean that the number of persons employed in the civilian work force will be 73 million.

Of this total, 60 million will be employed in private non-agricultural industries, compared to 49.3 million so employed in 1953.

Average hours of work will decline 0.8% a year. Industrial productivity will increase from 2½% to 3% a year.

All this adds up to $535 billion GNP in 1965.

* * *

LESS THRIFT

Only jarring note in this optimistic projection is that no large new area of demand has been created that will carry with it the steady growth that is forecast for the next 10 years.

In a practical sense, the economy has been moving sideways rather than climbing. There have been no sharp drops, but neither has there been substantial growth. The population has been increasing, and there is a sustained level of demand.

Accumulated savings are high, and there is a great deal of accumulated purchasing power. Personal savings are averaging

No, Mr. P. A., you don't do it that way

Can you picture a Purchasing Agent on this job—doing piping maintenance work? No—his headaches are many, but this isn't one of them. Yet he can help the Maintenance Dept. plenty—for he's a key man in getting the best valves for every service.

Purchasing men know the risk of gambling with valve quality—especially now when maintenance rates are so high. It costs just as much to install an inferior valve as a good one—and a lot more to keep the poor-quality valve working. *Buying for price tag savings was never more unwise.*

Thrifty buyers are meeting the problem handily with Crane valves. Traditionally better Crane quality gives greater assurance of value—of dependability in service—of low cost maintenance. The complete Crane line permits widest selection.

Crane Co., *General Offices: 836 S. Michigan Ave., Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas.*

CRANE

VALVES · FITTINGS · PIPE · PLUMBING · HEATING

For More Information Circle No. 115 on Inquiry Card—Page 17

7.9% of disposable income, but if the economic projections for 1965 are to become reality, this would have to drop to 6% of disposable income; otherwise the consumer would not spend sufficient money to move all the goods then produced.

* * *

PROPS IF NEEDED

What the Government's economic forecast further supposes is that there will be no recessions—no depressions.

It means that if basic industries show a downward trend, this will have to be offset quickly.

Greatest total market for steel is in the automobile, construction and machinery industries. The Government's $50 billion street and highway improvement program is aimed at stimulating the market for automobiles.

In the construction industry, one of the most effective stimulants has been easy financing.

To stimulate buying of machinery, there was the provision for accelerated amortization of plant construction in the interests of defense.

From these activities, it is clear that the Government has, to a considerable degree, already committed itself to keep basic industry at a high level of operation.

* * *

POLITICOS DIFFER ON METHODS

It is further apparent that this commitment to keep industry operating at a high level was initiated by a Democratic administration, but continued, and even accelerated under the Republicans.

Point of difference between the two parties has not been on objectives, but on methods.

Only distinct cleavage is that the approach of the Democrats has been for the Federal Government to intervene directly when one segment of the economy appears to falter, while the Republican approach basically has been to provide the stimulus through industry, State or municipal government.

* * *

OPERATION BOOTSTRAP

Regional problems present another facet of the so-called rough spots in the economy.

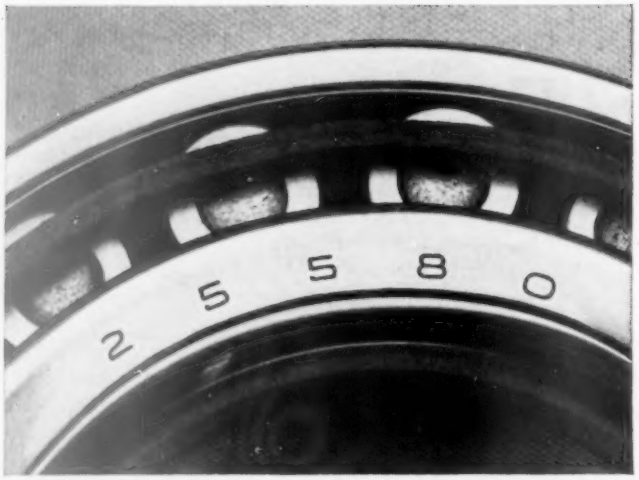
For a long time, there have been areas of the nation that showed a degree of recovery during periods of great national prosperity, and were the first to drop into depressed conditions when the rate of business declined.

In earlier decades, the South was economically backward. Then the bituminous coal areas were the sore spots. More recently, the anthracite areas have shown a downturn—and some sections of New England have been plagued with long-term high level unemployment.

While many panaceas have been offered for regional ills, a recent report by the National Planning Association Committee of New England comes up with some interesting ideas:

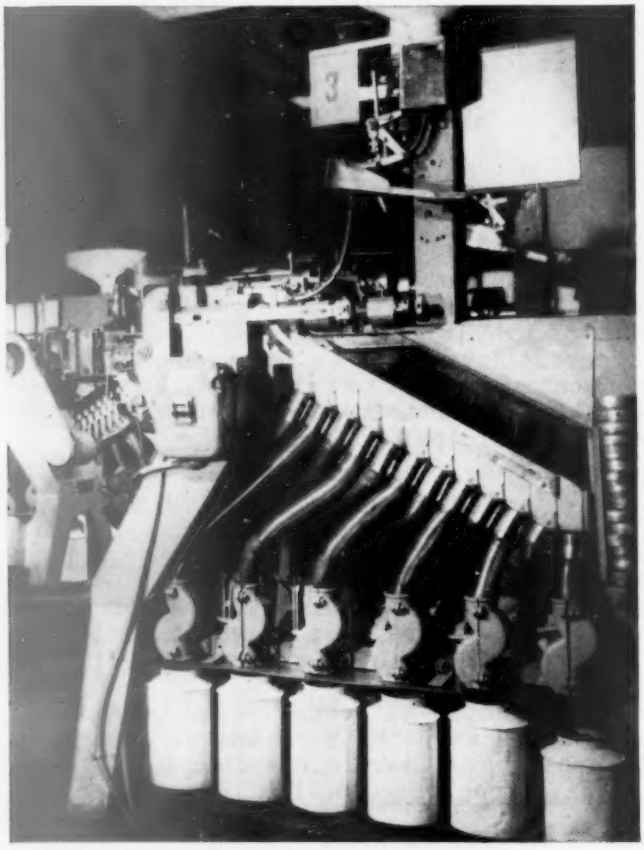
(1) That the New England economy is sound, neither stronger nor weaker than the national economy; (2) that New England's future economic prosperity is linked with its industrial ability to adopt new techniques and develop new products, and (3) that individuals and organizations in New England must assume the initiative for increasing the region's prosperity.

NPA study points out that the loss of textile industry to New England has to some extent been compensated for by the development of durable goods industry, and that the transition to durable goods tends to raise the income level.

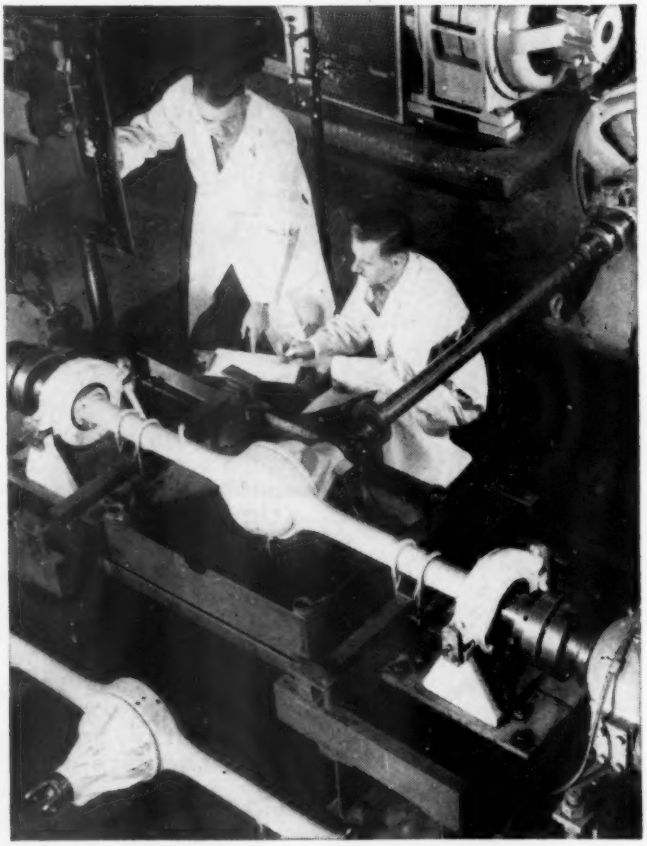


THE NUMBER 25580 on the bearing cone above—coupled with 25520 on the cup—identifies a tapered roller bearing of a certain size. But with the trade-mark "Timken"® also stamped on the bearing, this number sums up for a top P. A. the bearing's quality and the services that go with it.

Know what this number adds up to?



WE'RE NOT SATISFIED to finish rollers to extremely close tolerances. This machine sorts them into even more precise sub-sizes so we can match rollers in each bearing to almost microscopic limits. Thus each roller carries the same load. This assures quieter operation, longer life. It's typical of the extra steps taken to insure Timken bearing quality.



WE CONTRIBUTE RESEARCH on parts related to bearings that often helps improve their design. For instance, this test enabled us to recommend a design change that improved rear axle bearing lubrication and cut production costs. Quality and service like this make Timken bearings number 1 for value. What's more, the public acceptance of Timken bearings helps you sell your Timken bearing equipped products. So, always specify "Timken" with the bearing number. The Timken Roller Bearing Company, Canton 6, Ohio.

Quality, service and public acceptance make TIMKEN No. 1 for VALUE

TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL ○ NOT JUST A ROLLER ⊂⊃ THE TIMKEN TAPERED ROLLER ⊂⊃ BEARING TAKES RADIAL AND THRUST—LOADS OR ANY COMBINATION

For More Information Circle No. 116 on Inquiry Card—Page 17

NEW INFORMATION FOR YOUR

Catalog Files

NEW SYSTEM DESIGNATES ALUMINUM

Printed in 3 colors on coated paper, and suitable for tacking on wall or filing under glass for easy reference, a chart describes the new 4-digit system for designating aluminum alloys.

Peter A. Frasse & Co.

Circle No. 1 on Inquiry Card—Page 17

SELECTING POWER CABLES

Technical bulletin OK-1085 (128 pages) gives a complete story on 0 to 5000 volt, unshielded, rubber-insulated, neoprene-sheathed cable, used most commonly for low voltage power and control circuits.

The Okonite Co.

Circle No. 2 on Inquiry Card—Page 17

SIMPLIFY ALLOY STEEL SELECTION

A 12-page catalog discusses chemical contents and properties of a long list of A. I. S. I. & SAE alloy steels and shows how just two steels will do 95% of alloy steel jobs, reducing need for many types.

The Carpenter Steel Co.

Circle No. 3 on Inquiry Card—Page 17

ADHESIVES SOLVE BONDING PROBLEMS

Full technical data on epoxy resin adhesives are given in a 16-page brochure. These adhesives are formulated for difficult bonding jobs involving metals, wood, thermosetting plastics, etc.

Armstrong Products Co.

Circle No. 4 on Inquiry Card—Page 17

ORDERING THE RIGHT TOOL

A quick reference chart, printed in two colors on enamel finished stock, lists overall, flute, and assembled lengths of drills with utility or split sleeves. Comparison chart aids selection.

Chicago Latrobe

Circle No. 5 on Inquiry Card—Page 17

DATA ON 350 ORGANIC CHEMICALS

A 24-page booklet (F-6136) prepared for purchasing agents and technicians presents the latest data on more than 350 organic chemicals. Chemicals are arranged by family groups with application data.

Carbide and Carbon Chemicals Co.

Circle No. 6 on Inquiry Card—Page 17

HOW TO PACKAGE PROPERLY

A complete packaging portfolio describes and illustrates a unique selection of 12 styles and more than 70 types of corrugated boxes for a variety of products. It is titled "How to Pack It."

Hinde & Dauch

Circle No. 7 on Inquiry Card—Page 17

APPLICATIONS OF FLAMENOL WIRE, CABLE

Bulletin No. 19-354 contains application, and technical information on Flamenol wire and cable for machine tool, and other electrical equipment applications. Full specification data are supplied.

General Electric Co., Construction Materials Div.

Circle No. 8 on Inquiry Card—Page 17

IMPROVED SERVO CONTROL SYSTEM

A colored 12-page bulletin, No. 10051-D illustrates a complete line of fluid power pumps and accessories. It features a new electric hydraulic servo control system for units up to 150 hp.

Oilgear Co.

Circle No. 9 on Inquiry Card—Page 17

CONSERVING GRINDING TOOLS

Grinding wheels for every type of tool room operation form the subject of a brochure titled, "V40 for Tool Room Grinding." Hints are given on tool conservation. A chart helps proper tool selection.

The Carborundum Co.

Circle No. 10 on Inquiry Card—Page 17

USE & CARE OF CARBIDE TOOLS

Incorporated in a 24-page book are the results of research into the use and care of carbide tipped tools, extending back to 1928. Data are presented on recommended speeds and regrinding hints.

The Cleveland Twist Drill Co.

Circle No. 11 on Inquiry Card—Page 17

NO GUESSWORK IN ORDERING REAMERS

A comparative net price selector for reamers arranged by decimal equivalents from 0.400 to 3.0000 aims to end buyer confusion by placing size and type side by side with prices.

Lavallee & Ide, Inc.

Circle No. 12 on Inquiry Card—Page 17

WHY ABRASIVE WHEELS FAIL

Users of abrasive cutting equipment will find a 40-page, well illustrated, pocket size book a fund of information on reasons for occasional abrasive wheel failures and methods of prevention.

Wallace Tube Co.

Circle No. 13 on Inquiry Card—Page 17

AVOID COMBUSTIBLE GAS HAZARDS!

Details on how a complete line of combustible gas analyzers and alarms work are supplied in a 20-page brochure, No. 0703-3. A method of designing a combustible gas alarm system is outlined.

Mine Safety Appliances Co.

Circle No. 14 on Inquiry Card—Page 17

COUNTERS AS INDUSTRIAL AIDS

An illustrated catalog, in addition to giving complete descriptions of several counting devices, pictures numerous applications for varied industrial uses, such as on presses, etc.

F. B. Redington Co.

Circle No. 15 on Inquiry Card—Page 17

REMOVING TRAMP IRON

A detailed compilation of many types of magnetic installations for removing unwanted iron is contained in illustrated Catalog No. 17. Included is a unit with an alarm which warns when cleaning is needed.

Eriez Mfg. Co.

Circle No. 16 on Inquiry Card—Page 17

SEALS HAVE VARIED USES

An 82-page manual deals with four types of industrial "O" rings, "U" cups, "V" rings and Quad rings. Sections treat of industry standards, uses and specifications.

Minnesota Rubber & Gasket Co.

Circle No. 17 on Inquiry Card—Page 17

BALL BEARING TROLLEYS LOWER COSTS

The features of a new line of ball bearing trolleys for overhead conveyors, that result in low operating and maintenance costs, are described in Book 2536. Trolleys are for 3″, 4″, or 6″ beams.

Link-Belt Co.

Circle No. 18 on Inquiry Card—Page 17

VOLTAGE STABILIZERS IMPORTANT TO INDUSTRY

Applications for voltage stabilizers and their value to manufacturers using or producing electronic and electrical instruments are treated in catalog 4-260. Power range is from 5 to 200 watts.

Raytheon Mfg. Company

Circle No. 19 on Inquiry Card—Page 17

HOW TO PLAN PLANT COMMUNICATIONS

Importance of proper flow of current information for efficient production in a plant is emphasized in a 16-page, 8-color booklet. Diagrams clarify problems in inter-department communications.

Telautograph Corp.

Circle No. 20 on Inquiry Card—Page 17

COLD FORGING CUTS FASTENER COSTS

In a 12-page illustrated catalog (No. 58) the variety of parts that have been made by the cold heading process for specific uses are detailed. Data is given on special rivets, screws, etc.

John Hassall, Inc.

Circle No. 21 on Inquiry Card—Page 17

GEAR DRIVES INDEX AT HIGH SPEED

An increased line of standard roller gear drives for high speed precision indexing of automatic production machinery is covered in catalog No. 105. Data are given on load calculations & selecting drives.

Ferguson Machine & Tool Co.

Circle No. 22 on Inquiry Card—Page 17

GEARED PRESSES COVER WIDE CAPACITY RANGE

Colorfully illustrated Bulletin 66 describes a line of ruggedly constructed, straight side, single action, eccentric geared presses. Made in 1- and 4-point designs, capacities are 100-1000 tons.

Niagara Machine & Tool Works

Circle No. 23 on Inquiry Card—Page 17

MEASURING AND CONTROLLING PROCESS VARIABLES

Illustrations, descriptions and basic specifications of a complete line of process instrumentation form the contents of a 12-page general catalog. Complete instrumentation packages are discussed.

Fischer & Porter Co.

Circle No. 24 on Inquiry Card—Page 17

BROACHING FIXTURES FOR USE ANYWHERE

Self-contained, air powered, bench-type broaching fixtures that can be used almost anywhere in the shop form the text of a 12-page, 2-color catalog (No. B54-9). Photos and drawings show uses.

National Broach & Machine Co.

Circle No. 25 on Inquiry Card—Page 17

Circle Card Opposite Page 17 to Obtain These Catalogs

Additional Catalogs on Page 20

this simple idea cuts V-Belt costs

— as a V-Belt bends, feel its sides change shape!

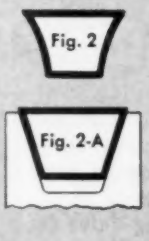
Pick up *any* V-Belt that has straight sides (Fig. 1) and bend it as if it were going around a pulley. At the same time, *grip its sides* with your fingers! You will feel the sides *bulge out* as in Fig. 1-A. Clearly, the bulging belt is forced to press *unevenly* against the V-pulley—and this concentrates wear at the points shown by arrows (Fig. 1-A).

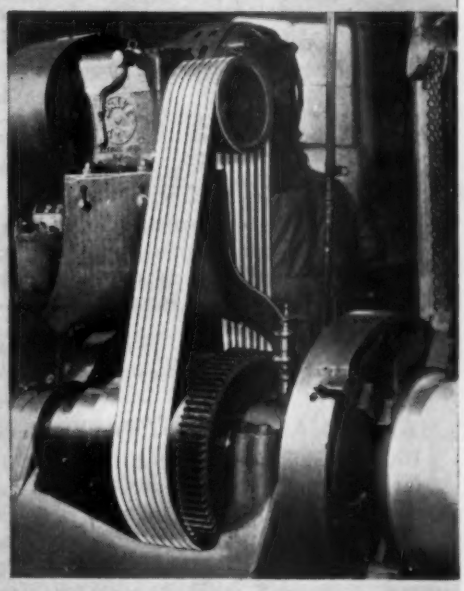
Now bend the belt with CONCAVE SIDES

(U.S. PAT. 1813698)

. . . the GATES VULCO ROPE (Fig. 2)

Instead of *bulging,* the precisely engineered CONCAVE SIDES merely *fill out* and become perfectly straight. This belt, when bent, *precisely fits* its sheave groove (Fig. 2-A). The sides press *evenly* against the V-pulley. Therefore, wear is distributed *uniformly* across the full width of the Gates Vulco Rope—and this means longer belt life and *lower belt costs* for you!





Typical Gates Vulco Rope Drive—the Gates V-belts are built with Concave Sides to insure longer belt wear.

When you buy V-belts, be sure to get the V-belt with the CONCAVE SIDES — the Gates Vulco Rope!

VULCO ROPE DRIVES

Gates

REG. U.S. PAT. OFF.

THE GATES RUBBER COMPANY
DENVER, U.S.A.
CS-5411

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

For More Information Circle No. 117 on Inquiry Card—Page 17

MINIMIZING DIE WEAR & FAILURE

Over 300 sizes of precision die sets are listed in a 192-page catalog. A section describes advantages of ball bearing guide post design in preventing premature die wear and failure.

Lempco Products Inc.

Circle No. 26 on Inquiry Card—Page 27

SELECTING PROPELLER FAN VENTILATORS

Specifications and other important installation data are offered in catalog No. 151 on propeller fans in portable, centrifugal, roof ventilator and other types with case study photos.

Ilg Electric Ventilating Co.

Circle No. 27 on Inquiry Card—Page 17

WHAT SPEED REDUCER TO USE

Revised rating tables for herringbone and spiral bevel-helical reducers are contained in catalog No. 150. The catalog (which will be mailed on request on company letterhead) helps reducer choice.

Brad Foote Gear Works

Circle No. 28 on Inquiry Card—Page 17

EXTRUSIONS FROM 14 MOST USED ALLOYS

A 12-page circular describes the aluminum extrusion process and also lists the physical properties and recommended applications for the 14 most generally used aluminum alloys.

Precision Extrusions

Circle No. 29 on Inquiry Card—Page 17

CUTTING DOWN FLOOR MAINTENANCE COSTS

Floors and floor problems are discussed in a 28-page attractive brochure. Photos, drawings and diagrams explore problems of floor maintenance focusing intense interest on means of reducing costs.

The Tremco Mfg. Co.

Circle No. 30 on Inquiry Card—Page 17

RIGHT TOOL FOR THE RIGHT JOB

How the right screw driver, nut setter, sander, drill, grinder, rammer, chipper, scaler or wrench can save labor costs and achieve more production is shown by action photos in catalog No. 38-A.

The Rotor Tool Co.

Circle No. 31 on Inquiry Card—Page 17

EFFICIENT HAND & FOOT VALVES

Bulletin 303-B describes the operation, standard features (or optional features), recommended service and installation techniques of a variety of hand and foot operated valves with flow diagrams.

Ross Operating Valve Co.

Circle No. 32 on Inquiry Card—Page 17

MOTORS FEATURE LATEST DEVELOPMENTS

Bulletin No. 401 describes a new line of completely enclosed motors. Engineering improvements result in smaller dimensions, greater versatility, streamlined design, lighter weight, and superior performance.

Baldor Electric Co.

Circle No. 33 on Inquiry Card—Page 17

SAFEGUARDING PRODUCTS IN PROCESS

A line of threaded and non-threaded caps and plugs for safeguarding products in process, storage and transit is described in a brochure. It lists over 100 stock sizes of 5 standardized designs.

Protective Closures Co., CaPlugs Div.

Circle No. 34 on Inquiry Card—Page 17

GAGE BLOCKS ACT AS STANDARDS

A 19-page catalog presents a line of 36 sets of extreme-tolerance gage blocks as well as a stock of standard sets. Combination of blocks, wrung together, produce any of thousands of dimensions.

Jansson Gage Co.

Circle No. 35 on Inquiry Card—Page 17

FACTORS IN USE OF LOW-ALLOY STEELS

A 16-page bulletin, No. A-61, describes a group of high-strength low-alloy steels, giving their corrosion resistance. It tells how they are formed and worked and design factors in their use.

International Nickel Co.

Circle No. 36 on Inquiry Card—Page 17

CYLINDRICAL GRINDING OF SMALL PARTS

A 4", type H, grinder for precision cylindrical grinding is treated in a 16-page catalog, No. A-54. What the machine does and how it operates is illustrated with 37 photos and line drawings.

Landis Tool Co.

Circle No. 37 on Inquiry Card—Page 17

RIGID PLASTIC PIPE HANDLES CORROSIVES

Complete technical data on a general-purpose corrosion-resistant, multi-polymer rigid plastic pipe are supplied in 6-page bulletin No. 80-A. Pipe has unusual impact strength & toughness.

American Hard Rubber Co.

Circle No. 38 on Inquiry Card—Page 17

LEADED STEEL MACHINES FASTER

How leaded steels are produced, their important production advantages, and case histories of their use are a few of the features of a booklet, "Lead Treated Steels.'

Copperweld Steel Co.

Circle No. 39 on Inquiry Card—Page 17

WHERE TO USE WIRE ROPE ASSEMBLIES

Catalog No. 5201 is designed to help in proper application of safe-lock wire rope assemblies which can be used as a part of machinery and equipment or for slings and hoists. Ordering hints are supplied.

Macwhyte Co.

Circle No. 40 on Inquiry Card—Page 17

Circle Inquiry Card Opposite Page 17

to Obtain These Catalogs

This kind of
SANDVIK
Super-Precision
Stretches Your
SPRING STEEL
Dollars
SANDVIK COLD ROLLED, HARDENED, TEMPERED AND BLUE POLISHED SPRING STEEL 6/10,000THS OF AN INCH THICK
.0006"
Here's evidence of Sandvik's ability to give you longer pounds of steel by cutting down "within-tolerance waste."
Sandvik Super-Precision does more than just keep gauge within specified tolerances. It consistently brings the strip closer to the exact size. This minimizes oversize waste . . . gives you more parts per pound . . . more production per dollar.
Remember too, that Sandvik's uniform physical characteristics from lot to lot means longer tool life plus better performance of the finished part.
Sandvik cold rolled high carbon and alloy strip steel is available:
● Precision-rolled in thickness to fit your requirements.
● In straight carbon and alloy grades.
● In special analysis for specific applications.
● In more than 800 stock sizes.
● Annealed, unannealed or hardened and tempered.
● Polished bright, yellow or blue.
● With square, round or dressed edges.
Ask your nearest Sandvik office for further information or technical assistance.
SOME SANDVIK SWEDISH SPECIALTY STRIP STEELS Steel for Textile Machine Parts • Band Saw Steels; Metal Band, Wood Band and Butcher Band • Camera Shutter Steel • Clock and Watch Spring Steels • Compressor Valve Steel • Doctor Blade Steel • Feeler Gauge Steel • Knife Steels • Razor Blade Steel • Reed Steels • Shock Absorber Steel • Sinker Steel • Spring Steels • Trowel Steel • Vibrator Reed Steel, etc.
THIS FREE FOLDER . . .
CONTAINS A SAMPLE OF SANDVIK'S SUPER-PRECISION SPRING STEEL, COLD ROLLED TO .0006" . . . LESS THAN 1/5th THE THICKNESS OF A PAGE OF YOUR NEWSPAPER.
Write for your free copy.
SANDVIK STEEL, INC.
111 EIGHTH AVE., N. Y. 11, N. Y., WAtkins 9-7180
230 N. Michigan Ave., Chicago 1, Ill., FRanklin 2-5638
1736 Columbus Rd., Cleveland 13, Ohio, CHerry 1-2303
3609 E. Olympic Blvd., Los Angeles 23, Cal., ANgelus 3-6761
SANDVIK CANADIAN LTD., P. O. BOX 430, Station O, Montreal 9, P.Q.
Sandsteel Spring Division • New York • Industrial Springs
Sandvik Saw & Tool Division • New York • Saws and Tools
SANDVIK STEEL
Sandvik
Quality Steels
SS-86

For More Information Circle No. 118 on Inquiry Card—Page 17

NEWS OF YOUR Suppliers

Ralph E. Jaret has been made executive assistant to John B. Wyatt, vice president in charge of eastern division

R. E. Jaret

sales, **Hinde & Dauch Paper Co., Sandusky, Ohio.** He will assist in the management of a sales organization operating from factory offices at Baltimore, Buffalo, Gloucester City, N. J., Hoboken, N. J., and Richmond.

Wagner Electric Corp., St. Louis, Mo., has named George M. Coffey as manager of industrial brake sales.

John G. Seiler, executive vice president and general sales manager of **Tube Turns, Louisville, Ky.,** a division of National Cylinder Gas Co., Chicago, has announced the reorganization of the company's sales department. The responsibilities of the firm are now being handled by: John E. Chumbley, Jr., assistant general sales manager, who administers sales policies and sales of welding fittings and flanges in the U. S. Thomas H. Pike, Jr., merchandising manager, who handles the activities in the Louisville general sales area as well as supervising the Houston and Los Angeles plants and the Engineering Service Division. Charles F. Morris, who is sales manager of the Forgings Division. Lincoln D. Hall, now assistant sales manager and administrator of policies and sales in Tulsa, Houston and the west coast. Dan R. Cheyney, assistant manager of the Engineering Service Division, in charge of alloys. And, Jack D. Tolliver, assistant manager of the engineering department, in charge of pipeline business.

J. Ray McDowell and W. F. W. Reeve have been made field engineers by **Hunter Spring Co., Lansdale, Pa.** Mr. McDowell will cover New York State and Mr. Reeve will handle Ohio and Kentucky.

Leschen Wire Rope Division, St. Louis, Mo., of the H. K. Porter Co., Inc., New York, has named Herbert L. Waltman as manager of the Pacific

H. L. Waltman

Northwest district. The district covers Washington, Oregon, western Idaho, Montana and North Dakota.

The Paper Container Division, Continental Can Co., New York, has named Robert N. Burchinal as Chicago district manager. Miles S. Roll will assume Mr. Burchinal's former post as sales representative in Wisconsin. Mr. Burchinal will supervise sales in North and South Dakota, Minnesota, Illinois, Wisconsin and the northern portions of Missouri Indiana and Iowa.

David E. Allen has been appointed vice president in charge of sales, and Charles H. Porter and Maurice J. Mc-

D. E. Allen

Carthy have been named commercial vice presidents of **Anaconda Wire & Cable Co., New York.**

The appointment of Ray E. Fleeson to the sales staff of the Chicago district office of the **Tubular Products Division** has been announced by **Babcock & Wilcox Co., Beaver Falls, Pa.**

William H. Sparr, Jr., has been transferred to New York and placed in charge of the steel section of the nickel sales department of **The International Nickel Co., Inc., New York.**

The Ink Division, J. M. Huber Corp., Hillside, N. J., has made Robert Burke assistant to the sales manager. He will work out of Huber's New York City office.

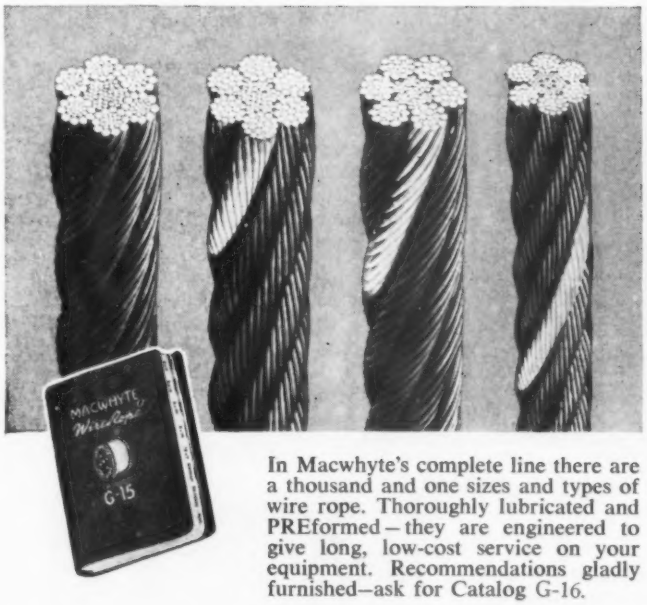
The appointment of Russell N. Bell as an executive assistant has been announced by **Victor Chemical Works, Chicago.** He will work out of Victor's general offices in Chicago. At the same time, it was announced that Dr. Lowell E. Netherton is now supervisor of inorganic research for the company.

(*Please turn to page* 24)

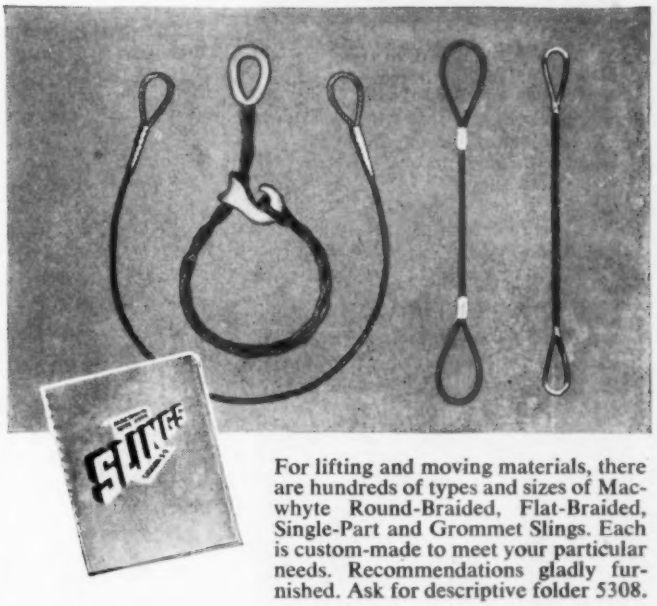
Get long, low-cost service with

MACWHYTE

WIRE ROPE • SLINGS • ASSEMBLIES



In Macwhyte's complete line there are a thousand and one sizes and types of wire rope. Thoroughly lubricated and PREformed – they are engineered to give long, low-cost service on your equipment. Recommendations gladly furnished–ask for Catalog G-16.



For lifting and moving materials, there are hundreds of types and sizes of Macwhyte Round-Braided, Flat-Braided, Single-Part and Grommet Slings. Each is custom-made to meet your particular needs. Recommendations gladly furnished. Ask for descriptive folder 5308.

Macwhyte Safe-Lock Wire Rope Assemblies are made to order in length, strength and flexibility desired. Terminals are permanently attached to one or both ends. Recommendations gladly furnished. Ask for Catalog 5201.

MACWHYTE COMPANY
2918 Fourteenth Avenue
Kenosha, Wisconsin

Manufacturers of Internally Lubricated PREformed Wire Rope–Round-Braided and Flat-Braided Wire Rope Slings –Stainless Steel Wire Rope – Monel Metal Wire Rope – Aircraft Cable and Swaged Fittings–Safe-Lock Wire Rope Assemblies.

Mill Depots: New York, Pittsburgh, Chicago, St. Paul, Fort Worth, Portland, Seattle, Los Angeles. Distributors throughout U.S.A.

The Reliance Electric and Engineering Co., Cleveland, has named Charles F. Carnish as district sales engineer in Detroit.

Warren W. Runkle has been named New York-New England district sales manager for the Wire Rope divisions of

W. W. Runkle

American Chain & Cable Co., Inc., Bridgeport, Conn. He will headquarter in New York City.

Robert F. Stockton III has joined **G-V Controls Inc., E. Orange, N. J.,** as sales manager.

Pratt & Whitney, Division Niles-Bement-Pond Co., West Hartford, Conn., has moved its New York office to 42-19 Main St., Flushing 55, Long Island.

K. Hall

Reynolds Metals Co., Louisville, Ky., has made Keith Hall manager of sales to the transportation industry.

Roll Formed Products Co., Youngstown, has named G. H. Emin as a sales representative in Chicago and northern Illinois.

The Cleveland Metal Abrasive Co. has named Robert S. Minning as sales representative in northern Ohio.

Anaconda Wire & Cable Co., New York, has announced changes in its sales department. H. V. Van Valkenburg, formerly head of district sales in Chicago, is now sales manager for the company. C. B. Peck, Jr., has been appointed manager of industrial sales. The new manager of utility sales is J. L. Tindale, and H. E. West is now manager of contractor sales. In addition, it was announced, that A. W. Koch will continue as manager of magnet wire sales and that Dan Mancini has been moved up to administrative assistant. In district sales operations, Ernest B. Miller, Jr., takes over as district manager in Chicago, and John N. Ratcliff, Jr., becomes district manager at Houston.

Cheever H. Ely has been appointed Cleveland district manager for **Norton Co., Worcester, Mass.** William C. Davidson will replace Mr. Ely as abrasive engineer in the Dayton, Ohio, area.

Brown & Sharpe Mfg. Co., Providence, has announced the transfer of Earl P. Leeds from machine tool sales

A. Anforth

E. P. Leeds

to director, industrial products sales. At the same time, it was announced that Albert Anforth has been named a representative in the firm's Los Angeles office.

P. G. Boyd, Chicago district sales manager of **The Youngstown Sheet and Tube Co., Youngstown, Ohio,** has been promoted to western manager of sales. He will supervise the district sales offices in Chicago, Des Moines, Grand Rapids, Indianapolis, Kansas City, Milwaukee, Minneapolis and St. Louis. C. Hix Jones will succeed Mr. Boyd as Chicago district sales manager, and David H. Goodfellow, assistant Detroit district sales manager, takes over as Detroit district sales manager.

Ampco Metal, Inc., Milwaukee, has announced new distributors for its products. The Centrifugal Pump Department has four appointments in the southern sales areas; O'Neill Pump and Engineering Co., Richmond; Virginia and Dixie Bronze Co., Birmingham; American Supply Co., Kilgore, Texas; and R. C. Foltz Co., Houston. The Weldrod Department has announced two new franchised distributors; Hart Industrial Supply Co., Oklahoma City and Arcway Equipment Co., Richmond.

The Kawneer Co., Niles, Mich., has named Harry H. Orr, Jr., as sales manager for its engineering division.

William F. Zarbaugh, who has been serving as assistant general manager for **The Cold Metal Products Co.,**

W. F. Zarbaugh

Youngstown, Ohio, has been made a vice president of the company.

Magnethermic Corp., Youngstown, Ohio, has named P. A. Hassell as manager of its new division for manufacturing items in the high-frequency induction heating field.

The appointment of John C. Kaufmann as a product manager has been announced by **Thomas & Betts Co., Elizabeth, N. J.** He will supervise sales and applications of cast solderless mechanical and compression connectors for industrial uses.

R. M. Freeman

The new general sales manager of **Amplex Corp., Brooklyn,** is Robert M. Freeman. Mr. Freeman worked his way up to the post from metropolitan sales representative.

Additional News of Your Suppliers will be found following the Industrial Development section

Morse Exclusive
TO COAST

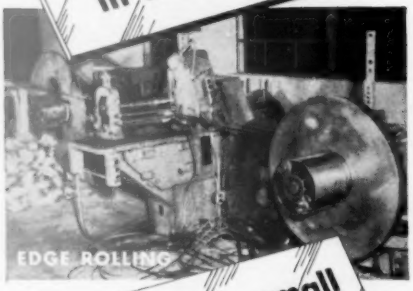
Cutting Tools

Buy them by phone from your Morse-Franchised Distributor and save ordering time

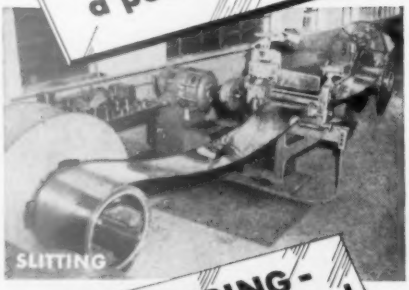
For More Information Circle No. 122 on Inquiry Card—Page 17

ULBRICH
Stainless Steels

The BIGGEST Little Converting Mill in the Country



Specialists in small orders—a foot or a pound and up



STRIP-TUBING—
Flat Wire-Converted to your exact requirements

Certified ANALYSIS can be given on any Ulbrich material

Complete Inventory—
Delivery from Stock

ULBRICH
Stainless Steels
WALLINGFORD · CONN.
Phone: Wallingford 6-7771

For More Information Circle No. 123
on Inquiry Card—Page 17

F.O.B.

FILOSOFY OF BUYING

PROFICIENT public purchasing was in the political spotlight in the Houston (Texas) elections as the campaign cards of the incumbent administration seeking reelection had shiny washers attached. The point of the gadget was to remind voters that the city now is buying washers at $3.13 per thousand in place of the $20 variety formerly purchased. City P. A. Tom Hanling hastened to explain that the 3,000 campaign washers were bought for the Mayor's account, and not charged to the city.

• •

STATE P. A. Harold Cheney of New Hampshire gets some unusual requests, but he wasn't quite prepared for the requisition recently handed him by a Recreation Division staff member. It called for "One Sunapee Golden Trout (*salvenius aureolus*) 33 inches long, 17½ inches in girth, and weighing 11 pounds, 8 ounces." Before getting out his trusty fishing tackle to go about filling the request, he checked back and discovered that the Recreation Division already had the fish, reputed to be the biggest one of its species ever pulled out of the lake. The record-busting pisces had been presented to the State by the lucky angler, Ernest Theoharris of Nashua. What they really wanted was to have it stuffed and mounted for permanent display at Mount Sunapee State Park. In their anxiety to follow correct purchasing procedure, they had slightly fouled up the requisition with a detailed specification of the end product. Fishing trip cancelled; file closed.

• •

AN INTERESTING personal history of the petroleum industry is "The Oil Business As I Saw It"—the reminiscences of a half century in the industry by W. L. Connelly, retired Board Chairman of the Sinclair Oil & Gas Company. The story starts back in northwestern Pennsylvania, when Drake's well made history and set the oil boom in motion. One of his schoolmates there was Harold Cosgrove, who also followed the industry to the new fields in Oklahoma, and who has given a lifetime of distinguished service to the petroleum industry—and to purchasing—as long-time executive secretary of the Purchasing Agents Association of Tulsa.

• •

ANNOUNCED as a "general purpose brain" is a new electronic computer and auxiliary tape handling system. Among the many commercial accounting problems that the device will solve if you feed it the right figures, inventory control and purchase analysis are specifically mentioned.

• •

PURCHASING's front cover portrait gallery of purchasing notables has made the news columns of the daily press on two recent occasions. In the Louisville *Times* (Sept. 22) was a view taken in the office of T. A. Corcoran when N.A.P.A. President Howard Ahl visited Past President "Corc", and there on the office wall is a display of a dozen or more cover plaques from past issues. And in the Milwaukee *Journal* (Oct. 24) our October cover is reproduced, featuring Milwaukeean Fred Syburg, with an abstract of his excellent guest editorial from that issue.

• •

COMPETITIVE bidders sometimes outsmart themselves. Witness the experience of the State of West Virginia, which recently put up a group of surplus motor vehicles for sale to the highest bidder. One ingenious, yet cautious, prospective buyer put in his sealed proposal: "Five dollars above the highest bidder." But the Attorney General's office ruled that this was no legal bid, threw out all the proposals, and called for a new deal.

SOMETIMES the same strategy is used in reverse. Not long ago, a purchasing agent showed us a quotation he had received: "10% less than (.....) Company's bid." And the bidder really meant it, too.

• •

WHEN William Berry, long time purchasing agent for The Nestle Company, New York, recently celebrated the completion of fifty years of service with that organization, more than 100 of his friends in the cocoa and allied trades attended dinner at the Stork Club in his honor. An unusual and pleasant feature of the affair was the fact that the New York Cocoa Exchange broker who served as toastmaster for the occasion was none other than Mr. Berry's son. The half-century service record started in 1904, when Mr. Berry came to Nestle's as an office boy and stenographer. Since 1919 he has headed the purchasing department, and had additional duties as assistant secretary of the corporation. At the dinner he announced his retirement from active business, effective at the close of 1954.

• •

THE important role of purchasing in the industrial standardization movement was highlighted at the annual meeting of the American Standards Association in November —not only in a special session on company standardization, appropriately conducted by purchasing men, but in a more personal way. The fifth annual award of the Howard Coonley Medal honored Thomas D. Jolly, Vice President of Purchasing for the Aluminum Company of America, a past president of N.A.P.A. and Shipman medalist, who also headed ASA in 1951 and 1952. In receiving the Coonley Medal, he joins the select company of former President Herbert Hoover and Senator Ralph Flanders, Howard Coonley, first president of the International Organization for Standardization, and William L. Batt of SKF Industries. Further, ASA chose as its new president Edward T. Gushee of the Detroit Edison Company, a recognized leader in purchasing, co-author of the first authoritative textbook "Scientific Purchasing", and also a Shipman medalist. And Vincent de P. Goubeau, Vice President—Purchasing, RCA, was named to the Board of Directors.

Our special business is specials . . . special fabricated wire cloth parts made to your specifications. We save you time, we save you overhead, we save you production worries. And, you get a better part at a lower cost.

We weave our own cloth . . . your guarantee of quality components. We are fully equipped to do all necessary cutting, shaping, fitting, welding, soldering, punching, binding, etc.

For more information on this "One-Stop" Wire Cloth Parts Service, send for our latest Parts Catalog.

NEWARK for ACCURACY

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

For More Information Circle No. 124 on Inquiry Card—Page 17

LUNKEN

THE ONE *Great*

Objectives For 1955

TOWARD the end of 1954, the purchasing agent of a midwestern organization received a memo from the General Manager, requesting a report. It asked specifically what he had done in the past three years to improve the operation of his department.

Purchasing had not been specially singled out for this request; the same memo went to all department heads. It was a reflection of the thinking in many managements today—not always expressed so directly. With business activity moving generally sidewise, and with strong competitive pressures being felt in most industries, it is more keenly recognized that the source of profits and progress must come from greater efficiency within the organization itself, in all its phases.

This purchasing agent had done a conscientious and reasonably forward looking job. His review turned up the material for a fairly satisfactory report. But even more strikingly, his self analysis revealed to him the good ideas that had not actually been put into operation, the improvements that had been postponed for one reason or another, the opportunities that had been missed.

When he finished writing his report, he immediately made a resolution that the record for the coming year would be a better one. He listed the specific objectives for improvement and laid his plans for attaining them. "I'm writing my 1955 progress report now—in action," he says. He has an idea that this is exactly what management had in mind in making its request.

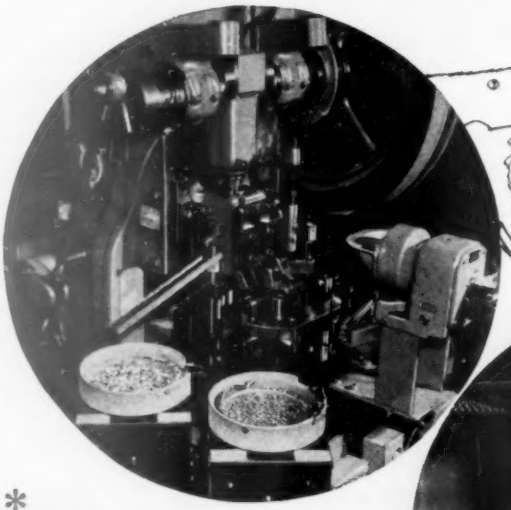
Periodic review is a healthy habit. Foresight, planning, and action are better. The time to start the 1955 record is now.

Stuart F. Heinritz

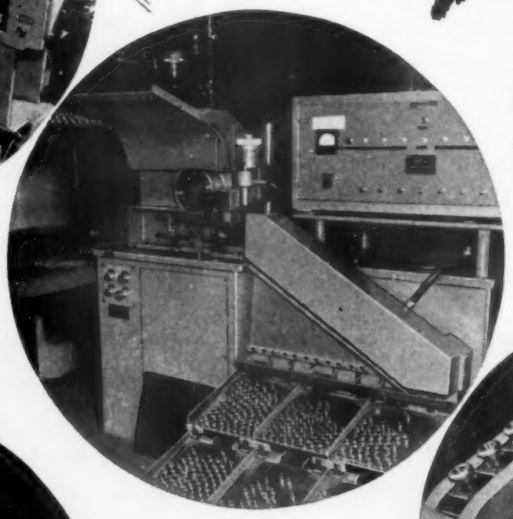
Blueprints call for bearings?

Call on NEW DEPARTURE

PDQ*!

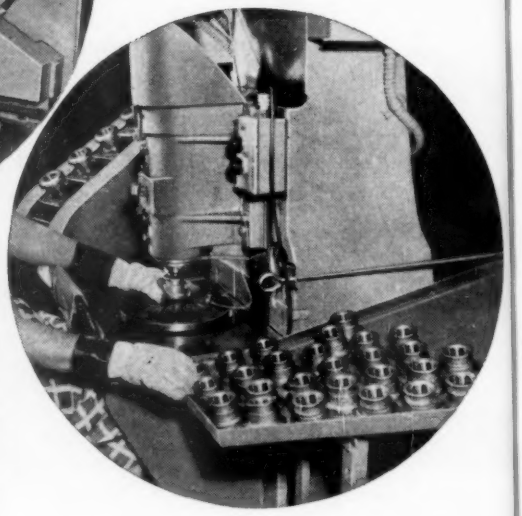


* **PRICE!**—Savings of automation in New Departure plants are reflected in prices impossible with less modern methods. Here a unique machine automatically assembles refrigerator door bearings . . . with notable savings for the buyer.



* **DELIVERY!**—Electronics work at New Departure! Bearing races are speedily sorted into six dimensional classifications by this machine. Volume is up because New Departure invested in this modern equipment.

* **QUALITY!**—Painstaking quality control, at every manufacturing step, works to approach perfection in every bearing. Here you see an electronic inspection of operational noise level. Any sub-standard part is automatically rejected. There's no chance for error. You are sure of top quality—every time!



PLUS ENGINEERING SERVICE—There's no substitute for experience . . . and New Departure offers you an unmatched backlog of accumulated ball bearing knowledge. So whenever the prints call for ball bearings, check with New Departure for engineering assistance in bearing selection and application. Phone, wire or write . . . you'll get action from New Departure—PDQ!

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

NEW DEPARTURE
BALL BEARINGS

NOTHING ROLLS LIKE A BALL.

For More Information Circle No. 157 on Inquiry Card—Page 17

Highlights

This issue's important features summarized for the busy reader

Purchasing agents in many companies are finding that **Reciprocity** is coming back in a big way, with increased pressures from vendors and from their own sales departments. It takes many forms, ranging all the way from reasonable consideration of a good customer to highly complex and thoroughly uneconomic deals. The proposals seem harmless enough when prefaced by the familiar phrase "all other things being equal". But are other things equal? The list of pertinent questions included in the article on page 81 will help you in judging the validity of this sales appeal.

Are **Small Quantity** requirements your problem? There's an interesting story on page 90 about a vendor who has made this kind of order his specialty, meeting precise specifications—by the pound. That's his business. But don't look for volume discounts here; big quantities cost extra.

This month's **Guest Editorial** (page 77) is contributed by H. E. Kaiser, N.A.P.A. Vice President representing District No. 2. His topic, appropriate to the season, is "Inventory Time".

There are all sorts of ways of **Writing A Purchase Order,** adapted to various kinds of business. If your operation involves routine requests for quotations, multiple order copies, and extensive receipt of partial deliveries, you may find convenience and economy in using a hectograph master system. How it works, how the order copies are distributed, processed, and filed, is explained in the article on page 84, complete with flow charts and form for a typical application.

Standardization is one of the important and effective tools of purchasing. The recent annual meeting of the American Standards Association gave particular attention to the purchasing angle and its relationship to engineering considerations. Two papers from this conference are presented in this issue for your benefit. Turn to pages 95 and 97.

Purchase Order Files have a way of getting cluttered up with open orders for minor balances of undelivered items. Sometimes they are essential. But there are many instances where it is better practice to clear the file. A practical system for accomplishing this is described on page 74.

Two relatively **New Processes** that may be of advantage to your company are worth your attention. Metalphoto reproduction for name plates, dials, and wiring diagrams where detail is important and quantities are small, is described on page 71. Precision casting by the frozen mercury process, which is gaining ever wider acceptance, is described on page 109.

One man's surplus is another man's bargain. Frequently there are good opportunities for **Buying At Auction,** but it's no place for an amateur. The article on page 79 cites several examples some of which turned out not so happily, and some that yielded excellent results. First of all, you need a sound sense of values and a knowledge of what you can use. Couple this with the ability to keep your enthusiasm and competitive instincts under control. Finally, learn the techniques that the professionals use in their bidding and selling.

Requisitions are an intimate and vital part of the purchasing procedure, though originating in other departments. Poor requisition writing can seriously handicap buying efficiency. What one purchasing department is doing about it is told on page 114.

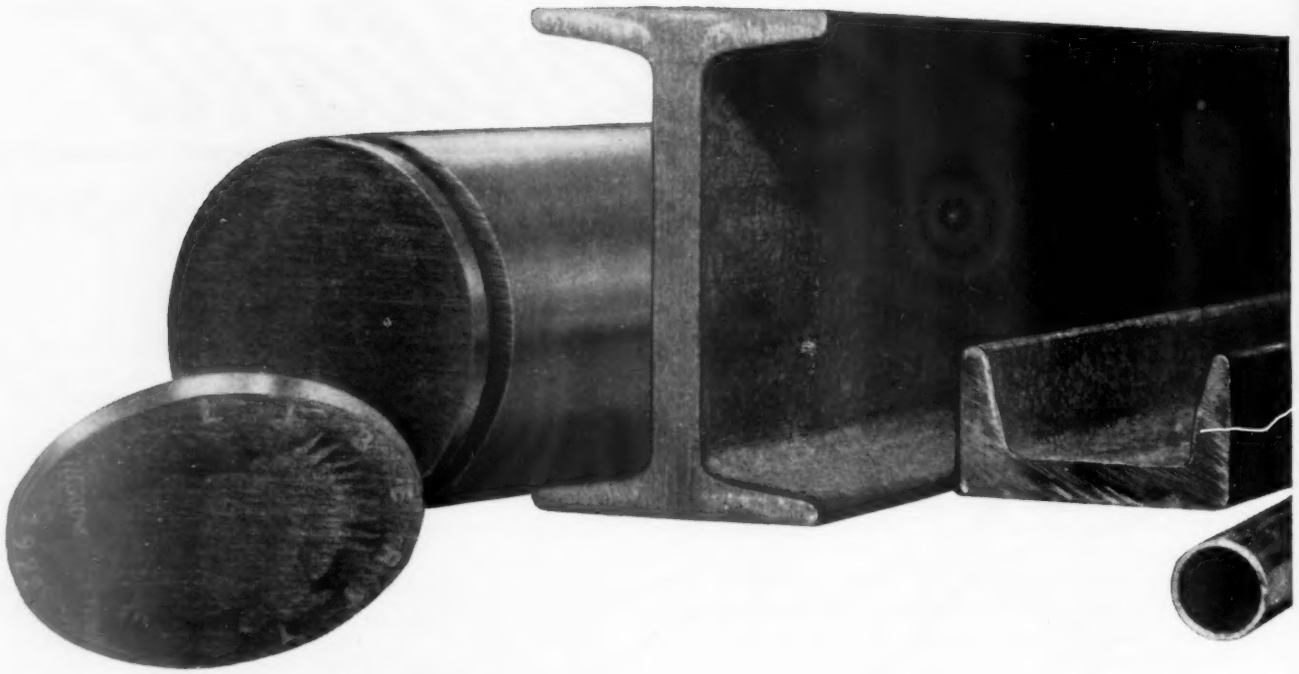
Judicial opinion is divided on how **Fair Trade** price laws affect buyers who do not sign the agreements. Present status of this legal and economic issue is reviewed in the article on page 112.

Don't overlook these regular monthly departments, compiled for your information: the Washington Report (page 13); New Catalogs (page 17); New Equipment and Products (page 128); News of Your Suppliers (page 22), of Association Activities (page 178), and of Men in Purchasing (page 228); Keeping up to date on such developments makes for better buying.

COMING—IN NEXT MONTH'S ISSUE

A full-scale case study of a successful purchasing department

Also: Interviews — Dealing with Supply Houses — Packaging



What do steel inventories REALLY cost?

You might be shocked to find how fast the hidden costs of carrying steel inventories add up! We know because steel inventories have been our stock in trade for over a hundred years.

But you don't *have* to tie up plant space and capital in steel you won't use for many weeks—may never use if products or markets change quickly. You don't *have* to lay out cash for cutting and handling equipment, incur unnecessary scrap loss, or divert manpower to unproductive inventory work.

Instead, you can hold your own inventories to a practical minimum and draw on Ryerson inventories as current requirements arise. At Ryerson you have the world's largest stocks at your disposal—plus unequalled facilities for preparing steel to your order—so you can get delivery of any kind of steel in practically any quantity, within a few hours.

That's why we urge you to consider *all* your costs when setting inventory policy. And let Ryerson help you release more of the money in steel inventories for profit-producing opportunities. Our inventory experience is at your service.

RYERSON STEEL

RYERSON CERTIFIED STEELS

Principal products in stock: bars, structurals, plates, sheets, tubing, alloy and stainless steel, reinforcing steel, etc., also machinery and tools

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE, N. C. • CINCINNATI • CLEVELAND
DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

For More Information Circle No. 158 on Inquiry Card—Page 17

An analytical examination of—

The Purchasing Function

By Eugene S. Page

LET'S take a look at the industrial purchasing function. What is it, and where does it fit into the scheme of things?

At the outset, we should orient ourselves as to the basic normal activities of an industrial manufacturing enterprise, including the purchasing activity. A good way to do this is to start with the purpose or objective of a business and work backwards through the various steps or activities contributing to the attainment of that end. It works out like this:

1. The objective of business is to sell the products and services produced, at a price and in a quantity that will return the maximum net profit per unit of capital employed.

2. Appraisal of the market — based on sales, actual and potential —creates a requirement for finished products to fill sales orders.

3. These products must be obtained from:
   a. Production, which includes internal manufacturing activities and/or PURCHASING by subcontract.
   b. Finished goods inventory, produced by the activities listed in (a).

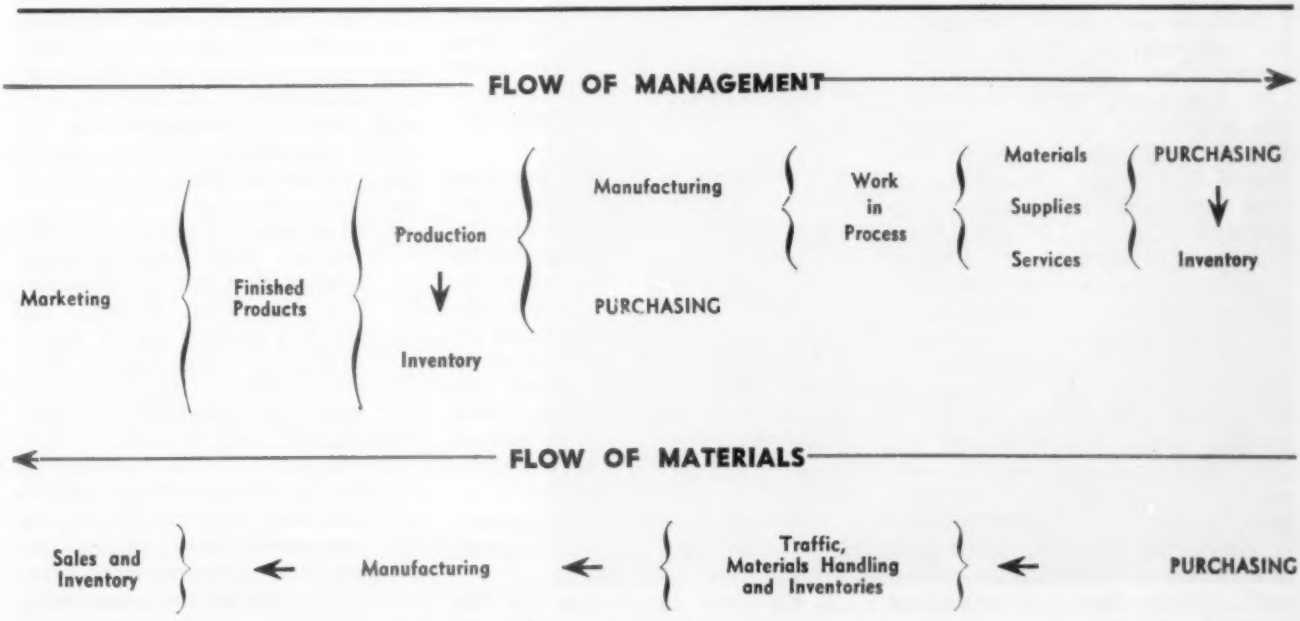
4. Production is derived from work in process, which in turn depends on raw materials, subcontract parts, supplies, and services.

5. These material and service requirements for production are obtained through PURCHASING or purchased inventory.

This process is graphically illustrated in Figure 1, which shows the purchasing function as the ultimate essential activity in management planning to fulfill the sales goal, and the initial activity in the flow of materials from acquisition to finished product.

The industrial purchasing function, then, is the efficient and economical acquisition of materials, supplies, and services required for manufacturing, and the procurement of production by subcontract as may be necessary or desirable. The charts also show how purchasing is a vital, integral part of the entire industrial process and, in particular, its close working relationship to materials handling and inventory activities.

The scope of industrial purchas-



ing can now be examined in terms of its principal elements, which are:

1. Objectives of purchasing.
2. Organization and facilities to attain those objectives.
3. The procurement activity itself, which includes four factors:
   a. Authorization.
   b. Contract.
   c. Receipt.
   d. Payment.

Objectives of Purchasing

What are the objectives of industrial purchasing? They can be classified under three headings.

Its *profit objectives* are:

To serve and strengthen the company as a participating member of management.

To participate in the writing of specifications and the determination of the type and place of manufacture.

To contribute in every way, within the scope of its authority and responsibility, to the obtaining of maximum sustained net profit.

Its *procurement objectives* are:

To obtain commodities and services of the desired quality, at the lowest total cost, within the time required.

To promote the development of new and improved materials and methods.

Its *performance objectives* are:

To strive for efficient, low cost purchasing performance.

To maintain sound business and personnel relationships.

To act always on the basis of honesty, morality, and recognized business ethics.

Organization and Facilities

The size and type of organization for industrial purchasing are determined by:

1. *Operations.* Management may be centralized or decentralized. The company may have one or many plants and offices. Manufacturing may be simple or complex—with one type of product or a diversity. These factors are basic. They relate directly to the size and complexity of the purchasing organization.

2. *Administration.* Purchasing likewise may be centralized or decentralized—both by the type of supervision and/or by location. In addition there are of course the problems of specialty buyers, technical and professional assistants, and clerical force. Administration may be direct supervision (centralized control) or through functional staff relationships (decentralized control).

3. *Purchases.* The size and complexity of the buying job, depending on the nature of operations, is also a factor that will help determine the appropriate purchasing organization. It will influence the concentration of dollar volume, the number and average size of purchase orders, and the method and frequency of commitment. The total dollars of purchases, together with the diversity of products and services required and the relative amounts of each, will bear directly upon the total requirement for purchasing personnel.

Facilities include the physical and financial resources made available for those who perform the purchasing function.

Financial facilities include salaries and wages of purchasing personnel, and all other expenses of operation, including market research, consultants' fees, travel, and allocations for space, heat, and light.

Physical facilities required are adequate space of the right type for work, for records, for interviews, for training, for group meetings, and perhaps for a desirable display of both purchased items and finished products. Included also may be a laboratory for testing the quality of current items and potential substitutes, if such laboratory and testing service is not provided by another department.

Procurement

Industrial purchasing, or procurement, is a broad function. It is primarily a matter of acquisition, but this is a great deal more than the preparation and mailing of a purchase order. Four basic steps are necessary in obtaining a commodity or service for a manufacturer, from outside sources. As listed earlier in this outline, these are: authorization, contract, receipt, and payment.

A. *Authorization.* Every purchase must be authorized. In each instance, the individual who has the responsibility and the authority for determining what is required, when, and how much, shall certify the need to those who will contract for it. Usually this authorization comes from outside the purchasing department, although it may be vested in the purchasing agent or subject to his review. Whoever is so authorized has responsibility for:

1. Determination of requirements, as to specifications, quantity and time.
2. Economic justification for the purchase, based on an adequate return for the expenditure.
3. Making the request for purchase, by requisitioning.

B. *Contract.* The contract, or purchase, is the prime responsibility of the purchasing agent. In each case, he and his staff are involved in the accomplishment of four phases, or functions:

1. Value analysis of the materials, products, or services to be purchased, in the light of the requirement, and in respect to specifications, quantities (at a time), and timing.
2. Determination of sources—including vendor selection, solicitation, negotiation, and decision.
3. Purchase — the consummation of the buyer/seller agreement, as to specifications, quantities, price, and conditions.
4. Completion of the purchase—securing acceptance of the order and delivery promise, and following through on performance of the contract, to satisfactory delivery.

C. *Receipt.* This phase of responsibility begins with the first shipment or delivery and ends only with final acceptance of the last shipment or delivery, usually at point of destination. Basically, two functions are involved, constituting a dual responsibility:

1. Certification of purchase — identify and count, weigh, or measure the goods received. This is a responsibility of the receiving department, which may or may not be directed by the purchasing agent.
2. Certification of quality—sample, inspect, and test the goods received, as may be required. This is a responsibility of the incoming inspection or quality control department, usually separate from the purchasing department.

D. *Payment.* Payment for the goods purchased, which completes the transaction, also is a dual function. It involves:

1. Completion of contract by the vendor. This requires certification that the purchase order, receiving report, and vendor's invoice are in agreement. The responsibility may be placed in the purchasing agent, the comptroller, or elsewhere.
2. Completion of the contract by the purchaser. This involves recording and vouchering the transaction and issuing the check in payment. It is a responsibility of the comptroller,

(*Please turn to page 224*)

Name Plates for Your Products

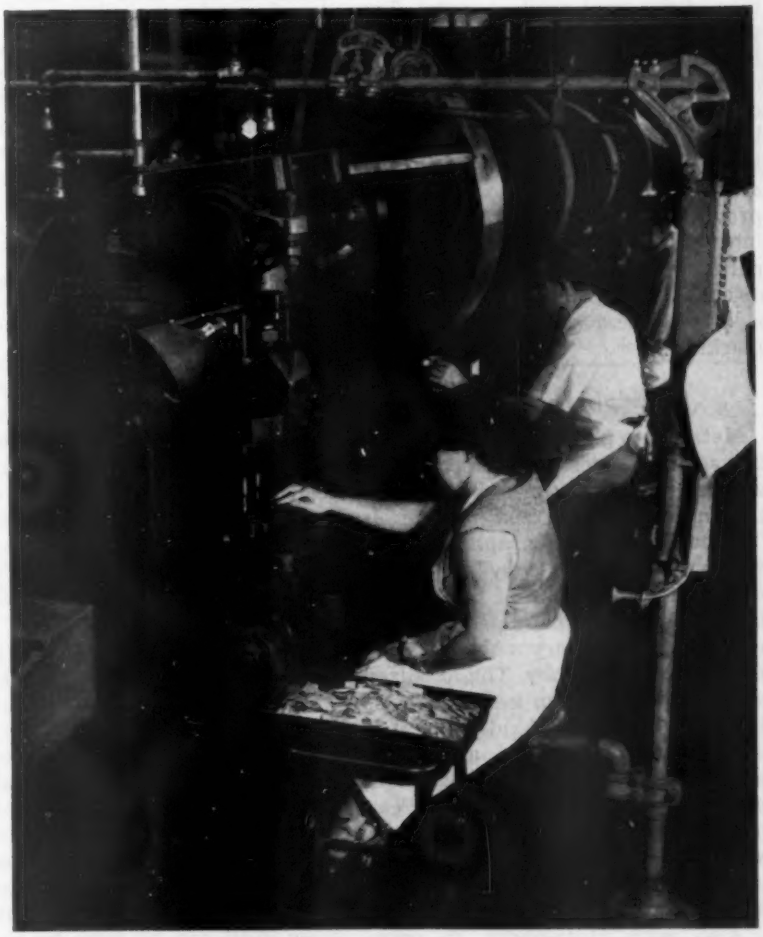
Choose the right process to suit your quantity, copy, and use requirements

By R. D. Middlekauff and J. P. Japel Cleveland Metal Specialties Co., Cleveland, Ohio

THERE are a number of pertinent factors which manufacturers should consider when choosing the most suitable process for producing name plates, diagrams, dials, instruction panels, or similar items in metalplate form, for attachment to their own products.

Usually small companies find it most economical and efficient to purchase such items from established name plate concerns. Larger firms sometimes process the metal plates themselves, although in most instances they also order from subcontractors for convenience sake. They do this because no one method for producing name plates is most efficient and economical in every instance. Accordingly, name plate manufacturers can select the best process according to the customer's requirements.

Nevertheless, those who specify the type of name plate, etc., to be produced or ordered should know the advantages and disadvantages of the respective manufacturing processes. The type of product desired, the abuse which it must withstand, the quantity involved, etc., dictate the choice among several alternatives as to process. With our company, for example, four different processes are available. acid etching, lithography, machine engraving, and



Plates are cut to size and pierced according to specifications, on standard machine equipment.

Metalphoto. The last named, incidentally, is the newest and offers many interesting and valuable features not generally known.

Each process of course, reacts best to conditions favorable to it, although often what appears to be the ideal process has a cost, wearability, or production-time handicap.

Alternative Methods

Machine engraving is accomplished with a power-operated routing tool, usually controlled by template. This process can make deeper "valleys" between the characters than any other method, but it is relatively slow and often expensive.

Acid etching uses a photographic negative to transfer a pattern onto a sensitized plate, after which acid is applied to "eat out" the valleys, which in turn can later be filled with paint or enamel. Except on short runs or with very simple copy, this process is faster and less expensive than machine engraving, but it does not permit as fine detail as other processes.

Lithography permits much finer detail than does either machine engraving or acid etching. It uses special plates to apply ink to the surface of the final product metal. The plates are often considered as relatively expensive and may cause delays that mitigate against rush orders. However, for producing very large quantities, lithography is the least expensive process. One disadvantage of this method is that it provides a "surface job" of printing, and, accordingly, gives less permanence than any other process discussed here. Scratching and abrasion may wear off the lithographic markings.

Metalphoto Process

Metalphoto plates are of aluminum in various gauges and sizes, with an anodized surface layer of 0.0005-inch thickness. The desired legend is "printed" by a photographic process which causes the "copy" to penetrate the entire depth of the surface layer. Thus, the copy is far more resistant to ordinary rubbing-wear than with lithography. The anodized surface of aluminum is more resistant to corrosion, oxidation, salt, acids, and alkalis, and also more economical than other metals often used for name plates. Etching can of course be accomplished on brass, stainless steel, and even monel; the latter two, while exceptionally resistant, are also very expensive.

Also, with Metalphoto, its completely smooth surface prohibits any valleys from becoming encrusted with dirt. Lastly, since the Metalphoto process permits much finer detail than any other process—as many as 1000 lines per millimeter—even tone pictures can be reproduced. In practice, such plates have been successfully used for complex wiring diagrams, replacement part lists, instruction panels and other applications where details required are too fine for etching. Compared with lithography, Metalphoto has a superior quality, with a slightly higher cost on long runs, and a slightly lower cost on short runs. Also, it is the fastest of all of the processes except when only one or two plates containing simple copy are needed. In this case machine engraving is usually prescribed.

Products of the Metalphoto process, as well as those of lithography, can be produced in multiple from a single plate. Metalphoto plates can also be blanked, trimmed and pierced; they can be fitted to curved surfaces and can be printed on both sides.

Metalphoto images ordinarily are a sharp black against a light aluminum color background. They can also be had in certain color combinations—including the color gold—through the use of chemical tints.

The process involved in producing Metalphoto plates, which are obtained pre-sensitized from the manufacturer, is similar to ordinary photography. The photographic process itself can be done by an ordinary camera, and the finishing accomplished with ordinary photographic darkroom equipment, using standard photographic chemicals. The only special operation necessary is a simple final step in which the metal plate is boiled for 20 minutes in a Glauber's salt solution, then dried.

ETCHED NAME PLATES, with acid resistant compound already applied, are readied for an acid dip.

Although acid etching, machine engraving and lithography have been used for many years, the Metalphoto process was developed only within the past year. Even in this short period, its use is rapidly increasing among not only some of the largest manufacturing companies, but also many of the smaller ones.

Thus far, the Metalphoto process has been used chiefly for producing name plates, instrument panels and dials, diagram and instruction panels. A great number of other possibilities for its applications are only now beginning to be explored by user companies' own design engineers and research departments.

The definite applications for Metalphoto, already proven, are indicated:

1. Where the need is for permanence and the quantity is small to medium (up to several hundred plates).
2. Where precise dimensional relationships are mandatory, for example on certain instrument scales.
3. On plates with very fine detail—such as complex wiring diagrams, lists of patent numbers, instruction panels, and replacement part lists.

LITHOGRAPHED PLATES are coated with a clear lacquer, then sent via conveyor through baking oven.

METALPHOTO PLATES are printed and developed in a dark room; standard photographic techniques and solutions are used.

STANDARD PROCESSES FOR MAKING NAME PLATES

	MACHINE ENGRAVED	PHOTO PLATES ENGRAVED	ACID ETCHED	LITHOGRAPHED	METALPHOTO
LEGEND APPLIED BY:	Pantographing	Forced Acid Bath	Acid Dip	Printing on Metal	Photographing on Metal
COLORING PROCESS	Filling	Filling or Painting	Painting	Printing	Tinting
DEPTH OF DETAIL	To .020 depth	To .010 depth	To .003 depth	Surface Only	Imbedded in Anodized Layer
SPECIAL QUALITIES	Deep Detail, Exceptional Accuracy	Reproduction in Deep Detail	Large Quantities with Permanency	Large Quantities with Economy	Small Lot Reproduction with Exceptional Detail & Permanency
MOST ECONOMICAL QUANTITIES TO ORDER	Small Lots or Single Items	Large Quantity Reproduction of Engraved Plates	Large Quantity Lots	Large Quantity Lots	Small Quantity Lots
MATERIALS USED	Any Metal or Bakelite	Aluminum, Brass, Zinc, Stainless Steel	Aluminum, Brass, Zinc, Stainless Steel	Aluminum or Brass	Aluminum
ODD SHAPES MADE BY:	Piece Fabrication	Piece Fabrication	Temporary or Permanent Dies	Temporary or Permanent Dies	Temporary Dies or Fabrication
FINISHED PRODUCTS	Name Plates, Scales, Dials, Plaques	Name Plates, Scales, Dials	Name Plates, Identification Plates	Name Plates, Instruction Plates	Name Plates, Scales, Dials, Wiring Diagrams
NORMAL LEAD TIME	10 Days	3 Weeks	3 to 4 Weeks	3 Weeks	10 Days

Courtesy, Cleveland Metal Specialties Company

Clearing the Order File of Minor Balances

MINOR BALANCE CANCELLATION

Form 2175 1-14-54 Date

P. A. No.

Part No.

Qty. Ordered

Bal. to be Cancelled

Requested By:

Purchasing Department

PROD. CONTROL

☐ O. K. to Cancel ☐ Require Balance

By_____

RECEIVING DEPT.

Our Records Adjusted

By_____

RETURN TO:

Date

Gentlemen:

MINOR BALANCE CANCELLATION NOTICE

Our Order No.	Part No.
Balance of	

Our records indicate a minor balance on the above order No. which we are considering cancelled. Please change your records to agree.

MINNEAPOLIS-MOLINE COMPANY

By_____

Purchasing Department

A SIMPLE POST CARD form has helped the purchasing department of Minneapolis-Moline Company solve the problem of minor balance cancellations quickly and economically.

Several years ago the department found that its open order files were crowded with hundreds of partially filled orders which showed minor balances still due on order but should have been considered complete. Because these orders were weeded out only when a new committee was made, their accumulation became bothersome.

The first system devised to handle the problem was a big improvement, but it still wasn't completely effective. Under this method, an expediter would stamp his tracer copy of the purchase order with a prepared stamp when it was considered to be complete. That copy would then go to production control for approval and to receiving for record clearance. When the copy was returned to the purchasing department, a new cancellation order was typed and sent to the vendor. This simply contained the words: "Please consider this order complete."

Some of the buying sections, however, did not expedite from the tracer copy. Thus, when a minor balance cancellation was in order, it was necesary to write out a requisition in longhand, get it approved, and then type out the cancellation order.

An even better method was suggested by one of the purchasing agents of the Minneapolis farm machinery manufacturer, L. A. Bagger. It is a simple post card form, printed on the company's own multilith equipment. The card, illustrated here, is self-explanatory.

The expediter fills out the necessary information on the upper section of the form, and sends it to production control and receiving. When it is returned to purchasing, with authorization to cancel the balance, the lower half is detached and mailed to the vendor, enabling him to clear his records.

The new system operates at minimum cost—less than a cent for the card, two cents for postage, and the trifling clerical time to fill it out. The previous method involved considerably more clerical time, typing, and a relatively expensive multi-part cancellation form. Since Minneapolis-Moline has a few hundred of these orders to handle every month, the savings in a year add up to a tidy sum.

It's Inventory Time

• *By H. E. Kaiser*

Herman E. Kaiser is Senior Assistant Purchasing Agent for the Phillips Petroleum Company, Barltesville, Oklahoma. He is currently serving on the Executive Committee of the National Association of Purchasing Agents as Vice President for District 2, which includes the Dallas, Fort Worth, Houston, Oklahoma City, Sabine-Neches, Shreveport, Tampico, Texas Panhandle, Tulsa, and Wichita chapters. He has been an active member of the Tulsa Association for 20 years, was its president in 1940 and National Director the following year.

Mr. Kaiser is a native of Sweet Springs, Missouri, and attended business college at Sedalia. He began his purchasing career with the Empire Companies (now Cities Service) in 1920, and joined the Phillips organization two years later as a buyer. In his present position, he purchases for the company's production department and warehouses.

Active in civic affairs, he was a charter member of the Junior Chamber of Commerce at Bartlesville, and in 1934 received the U. S. Junior Chamber distinguished service award. As a member of the Chamber of Commerce, he served as representative to the Junior Chamber for 14 years. He is a past president of the Kiwanis Club, and has the remarkable record of 25 consecutive years of perfect attendance.

Outstanding among his recreational interests is music, as a choir singer and member of the first national championship barbershop quartet. The records made by this quartet at the New York World's Fair are among the highly prized memorabilia of the Society for the Preservation and Encouragement of Barbershop Quartet Singing in America, now national in scope. He was also active in the early days of the Little Theater Guild.

He is an elder in the Presbyterian chuch, enjoys golf and bowling, and is a member of the Hillcrest Country Club and the Masonic order.

IN MOST business organizations, an occasional inventory is necessary. Many surprises and unpleasant awakenings sometimes await those organizations which delay this procedure with the comforting thought that "everything is getting along all right."

In a business where physical materials are involved, it is customary to take these inventories periodically. Although the task may be voluminous and vexatious, it has to be done so that the owners and management, or perhaps stockholders and banks, may see if the balance sheet looks good or if the wheels of progress are in reverse. In those organizations where physical properties are not actually involved, there may seem to be little reason for concern about inventories. Although this idea has a tendency to promote a feeling of relaxation, it may be entirely erroneous. Maybe it's time for an inventory, whether we know it or not.

The purchasing business has become an enormous business. Mem-

bership in the National Association of Purchasing Agents has reached an all time high of nearly 17,000. From a conglomeration of diversified ideas, this organization has become a fine, smoothly operating, highly regarded professional organization beyond the fondest dreams of those who had the early, vague vision of some type of association that might be of some help to them in their work. N.A.P.A. has been blessed with high type of leadership, and in spite of pressures concerning certain political views and economic ideas, it has remained throughout the years non-political, non-partisan, and dedicated wholly to the services of purchasing men.

Our success as purchasers, however, must not be measured by numbers, nor can it be based on the successful operation of the association to which we may belong. How about the quality of this membership? Are we really as good as we think we are? Are we all equipped with a solid rock foundation of fundamentals on which to build and operate, or are we as individuals merely working from a sand bar that has formed from the successful operations of a few individuals who are equipped to do an outstanding job, and from whom we as a group are happy to take the credit? Are we doing—or even capable of doing—what management expects of us? Maybe it's time for an inventory of purchasing.

Management Opinion

As early as 1930, a prominent economist said, "I feel that in too many instances the buyer has figured at less than his true value, and that his position should be elevated. In some industries the cost of materials amounts to as much as 50% of total expenses. It is logical that buying should normally rank at least of equal importance with selling and producing, and under special circumstances buying may properly claim first place. In order to merit his prospective new position in industry, every purchaser must live up to his office of purchasing executive." Such a statement may have appeared somewhat overoptimistic at that time, but purchasing as a profession did make progress in the eyes of management and has continued to do so.

During World War II and the Korean conflict, so many leaders in purchasing not only drew, but successfully executed important assignments in Washington, but their ability and performance could not escape notice. At the same time, management had occasion to observe the results being accomplished by their own purchasing departments, when, time after time, the buyer was asked to do the impossible in procurement—and did it. Since that experience, management has taken this purchasing business much more seriously, and has been outspoken in voicing its thoughts on this responsibility. Here are a few examples:

In April, 1953, the executive vice president of our company made an address for our Management Night meeting in the Tulsa Association. He spoke in high terms of the purchasing function.

On our 1953 convention program, the president of an eastern manufacturing company declared that purchasing should be represented in top operating councils.

More recently, the president of a western company said, "Buying is just as important a function of the American economy as selling, but in a growing country such as ours this has seldom been recognized."

From a daily newspaper devoted to the petroleum industry, dated August 4, 1954, I quote: "Oil companies in some cases are making their purchasing department a much more active and direct working arm of management itself. More and more it is coming to be recognized that a good purchasing operation is indeed a part of the management sphere."

On our 1954 convention program, the president of the United States Rubber Company said, "The purchasing function today ranks in importance with sales, production, research, and the other important phases of business management."

The president of the American Standards Association stated, "Top management of American business in the past decade has 'discovered' the purchasing agent, and has drawn him into the inner managerial circle."

Top of the Ladder

These and other complimentary statements from outstanding authorities throughout the country—who should certainly be given credit for knowing whereof they speak—have a tendency to indicate a conclusion. They indicate that the purchasing profession has just about, if not quite, reached the top of the ladder of success.

Maybe this is true. Maybe we as a group really deserve this elevation. Undoubtedly there are instances where our sincere efforts, which have produced highly commendable results, have been ignored or unrecognized by top management because management has been so far away from us, or perhaps has been so involved with its own problems that it has failed to realize what a substantial contribution purchasing has been making toward profitable operations. It is my contention, however, that a good management usually has a pretty definite idea as to what is going on in its organization.

Delivery Wanted

E. F. Andrews, the immediate past president of N.A.P.A., put it into purchasing language, and certainly spoke words of wisdom when he said, "I believe that management has 'bought' good purchasing. The trouble is, they are still waiting on delivery in a few places." That is a serious statement that deserves serious consideration. Undoubtedly, management in many instances has 'bought' good purchasing, and will continue to buy it if they find it available. But in how many instances are they waiting for delivery? What are we going to do about these slow deliveries? As a group, purchasing has really moved into prominence and recognition, but where do we stand as individuals? Perhaps those responsible for the slow deliveries may be trying to get a free ride on the coattails of those who have been leaders in the profession—who have been accepted by management—who by their well deserved success have been responsible for the elevation of purchasing.

Management in most cases, I believe, it quite willing and happy to pay the employee what he is worth. That puts part of the problem up to us. On this basis purchasers, as a group, should fare pretty well. Some of us might accumulate an enviable estate, while others would perhaps face the perplexing necessity of augmenting our salary to eke out a reasonable livelihood. Can we, as individuals, qualify for the elevation our group is experiencing? Can we accept the fine comments being passed along to us by management leaders, with a clear conscience? Are we living up to the reputation that is being established for us? If not, it is time for us to do something about it.

This is a time for self-analysis, self-evaluation, and self-improvement. For definitely, this is inventory time.

Going . . . Going . . . Gone!

Purchasing at Auction

By Thomas A. Dickinson

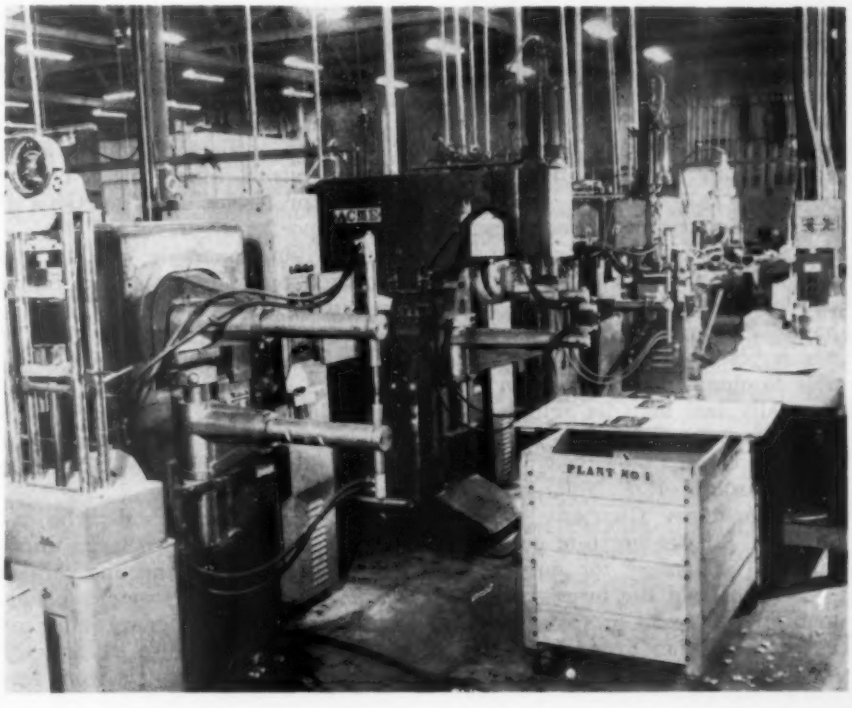
•

PURCHASING at auction sales obviously come under the heading of opportunism rather than steady, reliable sources of supply. Nevertheless, such opportunities do arise, and they are generally believed to be a good way to save money. Unfortunately, if purchasing at auction is done by amateur buyers, it is just as likely to have the opposite result.

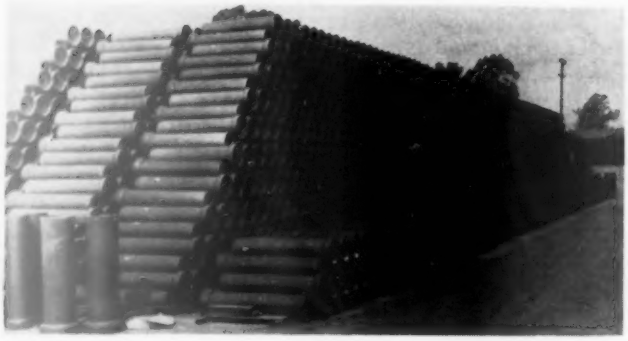
For example, one young executive who subscribed to the theory that "anybody can buy" and wanted to teach his purchasing department a lesson, recently attended a plant auction and bid in a lot of hand tools at $1,500. When the merchandise was put in stock at his plant and evaluated, piece by piece, he discovered that the tools could have been purchased new at any retail hardware store for about $1,200.

"I didn't actually know the value of the tools," he explained. "I did know that we could use them, and I figured I was in a crowd of smart businessmen who would stop bidding long before prices got up to the regular market level—so I just kept bidding a few dollars more than the next fellow until I got the lot."

To this day, the young executive doesn't know whether he was the victim of an auctioneer's stooge, or whether he was bidding against another optimist who thought he couldn't help getting a bargain if he didn't greatly exceed the bids of his competition. However, he has learned one valuable lesson—that there's no substitute for the knowl-



Excellent production equipment like this is frequently sold at bargain prices at plant auction sales, having lost its value to the original owner.



An alert municipal purchasing agent recently saved his city nearly $100,000 by buying this stack of sewer pipe at an auction sale, for less than its cost of manufacture.

edge and skill of a professional purchasing agent when it comes to spending money. Maybe the tuition fee of $300 for this lesson really was an auction bargain.

The bargain potentialities of auction sales are such that a considerable number of professional speculators conduct a profitable business, earning large annual incomes, simply by buying and selling auctioned merchandise. Many of the industrial sales staged by such specialized auction firms appeal to and are attended by no one other than professional buyers. Curiously enough, experienced auctioneers would rather deal with seasoned purchasing agents than with amateurs.

Why? Ben Bail, expert with the J. J. Sugarman Company, explains it this way:

"The professionals understand the advantages of buying in large quantities, and are in a position to use entire lots. We prefer to sell large quantities because it saves us a lot of time and money. We might gross more if we required people to bid on each and every item individually. But that takes a lot of time, and the cost of handling hundreds or thousands of small transactions would increase our expenses much more than it would increase our commissions or our margins of profit."

Professional auctioneers reserve the right to refuse a high bid that is "absurd" or too low to cover the auctioneer's costs. However, there have been many circumstances in which experienced buyers have been able to obtain merchandise for substantially less than its actual value to the auctioneer or his client—or to themselves.

For instance, R. R. Nolan of Western Machinery Company recently acquired $15,000 worth of good production equipment for only $1,200 because he had the foresight to attend an auction of property belonging to a defunct toy manufacturer.

"The great bulk of the merchandise to be sold consisted of the finished stock of toys," Nolan recalls. "The auctioneer had so many toys to dispose of that he apparently overlooked the relatively minor assets of plant equipment, and sent all of his invitations to people who would be interested in buying large quantities of playthings.

"I heard about the sale by accident, and attended because I knew the extinct company had some valuable production facilities that we could use. These items didn't come up for sale until near the end of the auction. I put in my bid. The auctioneer knew that it was almost ridiculously low, but he let me get away with it because there was practically no other bidding, and he had already taken in most of the money he expected on the sale of toys. He didn't want to stage a second sale in order to dispose of a relatively small amount of equipment."

At auctions where professionals must compete with amateur buyers, it is sometimes impossible for an experienced P. A. to obtain anything of significant value because his knowledge of prices and his objective sense of values limit the enthusiasm with which he bids. However, the average amateur, with his limited needs and limited funds, doesn't stand much of a chance against professionals at auctions of real importance.

A striking example of this was provided by Sam Epstein, a veteran buyer from Oakland, Cal., at a recent auction involving the sale of an estimated $1,000,000 worth of products and manufacturing facilities belonging to Earthmaster Farm Equipment Company, a now defunct division of Adel Precision Products Corporation.

Among the 150 persons who attended the sale were a large number of farmers and other individuals who wanted to buy tractors, plows, mowers, planters, seeders, etc., for their own personal use. Except for Epstein, the professionals were importers and exporters (some from as far away as South America and Europe) who wanted to buy large quantities of finished products for resale.

Bidding began modestly enough on a few gallons of paint, a disc harrow, and a field cultivator, all of which went to the amateurs. Almost an hour passed by before $1,000 worth of merchandise was sold.

During this "warming up" period, Epstein and his fellow professionals stayed in the background, sizing up the situation. When he was convinced that he was in a position to get what he wanted at a price he was willing to pay, Epstein stepped up to the auctioneer and suggested that bids be taken for all remaining merchandise. He pointed out that there were several potential buyers present who would be willing to bid on that basis. The auctioneer agreed, because his primary objectives included disposing of the complete accumulation and getting the sale over with as soon as possible.

The initial offer of $100,000, by a buyer from South America, smothered the hopes of the amateurs. An American exporter promptly upped this to $125,000, and in a matter of minutes the price had soared to $200,000.

By this time, it was obvious to Epstein that the bidding wouldn't go much higher, because the merchandise wanted by his professional competitors wasn't worth much more than that to them. So he made an offer of $225,000. His keen appraisal of over-all values was correct, and his strategy was sound. At that price, the goods were still attractive to only one other bidder. Five minutes later, he had bought what he wanted for the successful bid of $250,000.

Was it a good buy? If he had wanted to, Epstein could have turned around and sold his implements alone, on the spot, to the people who had been bidding against him, for almost as much as he had spent. In addition, he had acquired all Earthmaster production facilities and the exclusive right to manufacture spare parts for a line of implements that had been sold to farmers throughout the world—a business that should net a comfortable annual income for many years to come.

Yes, it was a good buy.

Occasionally, industrial auctions offer opportunities like this. But to capitalize on them, you have to be alert, and you have to know the game.

An old problem reappears

The P. A. Faces RECIPROCITY

By C. F. Teeple Asst. General Purchasing Agent International Minerals & Chemical Corp., Chicago, Ill.

IT IS not uncommon these days for purchasing agents to remark, "I've heard more about reciprocity in the last 10 months than in the 10 years before." Industry by industry, and company by company, as we moved from a sellers' market into a buyers' market, the interest in reciprocity began to mushroom.

Some companies prefer to call the subject "trade relations" or some similar polite name. Since purchasing agents believe in calling a spade a spade, they refer to this rejuvenated purchasing problem by the old name—reciprocity.

Only a small minority of sales managers will admit their sales policies include the use of reciprocity as a deliberate sales tool. They prefer to have their policies fall into the category of "doing business with our friends". However, by the time Company A's policy is transmitted from sales manager to district sales manager, to salesman, and then to you, as purchasing agent of Company B, you, on the receiving end, do detect the edge of a deliberate sales tool.

If the sales department of Company A is not able to sell (Or is "coerce" a better term?) its products to Company B, the sales manager and the purchasing agent of Company A have a conference, with the object of convincing the buyer that Company A should stop buying from Company B. Resulting solution: Company A should buy from Companies C, D, or E, or from all three, "because they are our good customers". There's more than one way of using a tool.

Rather than avoiding this problem, let's admit that it exists, and then face it squarely. Reciprocity exists in many forms. We shall start with the simplest one; then, step by step, show other examples in the order of their increasing complexity.

1. Buying from Your Company's Friends

Company A is a customer of Company B. Picture yourself as the purchasing agent of Company B. After appropriate investigation and study, you have determined for yourself that in respect to Product X—a raw material produced by Company A—all other things are equal between Company A (the customer) and Companies C, D, and E (the other present or potential suppliers). You therefore take into account the fact that Company A is your customer, which makes it more attractive as a source of supply than some of the others that are not customers. You therefore buy a *part* of your requirements of this product from Company A.

This is the simplest type of reciprocity. No alert, open minded purchasing agent would object to it. You are merely making it a point to do some business with a company that is friendly to your own. Certainly there is nothing wrong with this kind of purchasing under the circumstances as outlined.

2. Trading Dollars

The purchasing agent's life gets more complicated with this type. It implies a formal reciprocity program. Everyone concerned presumably has a little black book, or a trade relations list showing from whom they buy and to whom they sell, and how much. The approach used here is one of matching dollars.

Company A buys $100,000 worth of your Product Y. You use $100,000 or more of Product X, made by Company A. Therefore you must buy at least $100,000 of Product X from Company A. If you buy less than that amount, they will reduce their purchases accordingly, dollar for dollar, of your product Y.

Who works out deals of this kind? Sometimes—but rarely—it is the respective purchasing agent of the two companies. Sometimes it is the purchasing agent of Company A and the sales manager of Company B, or *vice versa*. Sometimes management is directly involved. In about 9 cases out of ten, the normal channels of responsibility are destroyed. Executives with no direct purchasing responsibility exercise purchasing authority by telling the purchasing agent from whom to buy, or by laying down policies that accomplish the same purpose. If the reciprocity problem is carried to this extent, where it destroys the responsibility of a key division like purchasing, other business problems similarly dealt with could easily destroy the

responsibilities of other key divisions.

3. *Reciprocity with Customers' Friends*

This form of reciprocity is one of the easiest to explain, but one of the most difficult to execute. In this case you, as purchasing agent of Company B, buy Product X. Your regular sources are Companies C, D, and E. Your sales manager suggests that, to maintain or improve trade relations, you should buy some of this product from Company F. You learn that actually Company F is not *directly* a customer of your company, but it is owned by Mr. John Doe, who also owns substantial holdings in Company G, which doesn't produce the product you need but is a good customer of your company. Therefore, even though Company F is not your customer, all other things being equal, reciprocity demands that it be given some preference because of the ownership tie-in with Company G, a customer.

It doesn't always stop there. Instead of an ownership tie-in, the owners of Companies F and G are merely related, or—even more deplorable—they may be only good business friends who try to help one another. You, the poor purchasing agent of Company B, are of course not only expected to be aware of these nebulous connections, but you are expected to keep track of them and keep everybody happy. In trying to do so, if you take the situation too seriously you will probably end up in a psychiatrist's office. But that is one of the occupational hazards of the purchasing profession, at least in companies where reciprocity is permitted to go unchecked.

4. *The Three-Way Deal*

With this type, we are getting into the more complex stages. You are still the conscientious purchasing agent of Company B, buying Product X from Company C. You seem to be in the clear, so far as reciprocity is concerned, because they have no occasion to buy or use your Product Y. However, at the insistence of your management, you contact the purchasing agent or sales manager of Company C and tell him that his company will have to buy some of its requirements of Product Z from Company H (your customer). You imply (or threaten) that if Company C doesn't buy Product Z from Company H, your company B will stop buying Product X from Company C. This makes you feel like a heel, and rightly so. On the other hand, it illustrates how deeply involved you can become in reciprocity if you let the situation get out of hand.

5. *Progress Disregarded*

In this case, you, as purchasing agent, have been buying Product Z from Company H, your customer. A better product—V—comes on the market and is available from several other sources, but Company H doesn't produce Product V. Your company feels, for reasons of reciprocity, that it is advantageous to continue buying from Company H. So you overlook the technological product improvement, and continue to buy the now relatively inefficient Product Z.

This penalizes your production department by denying to them the advantages of the improved product. Your sales department answers this by offering to subsidize the pro-

? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

ARE "ALL OTHER THINGS EQUAL"?

Here are a few questions you may want to ask yourself when considering Company A as a source of supply on the basis of reciprocity

Was Company A interested in selling Product X to you during the period 1952-1953, when you needed it? If not, why not?

Is Company A a steady producer of Product X, or does it produce this item only when the sales of its other items are depressed?

Is Company A experienced and staffed in such a way that it can give you the kind of technical service, sales service, delivery service, production service, and repair service you need on a key item like Product X?

Is Company A's shipping point as near to your plant as that of your current suppliers? Would you be hurt in having Company A as a supplier, if the producers of Product X, now sold on a delivered basis, changed their policy and sold f.o.b. shipping point? (Remember this happened on steel a few years ago.)

Does Company A produce Product X at more than one location? How would it perform, in comparison with your present suppliers, in the event of a fire, strike, or flood?

What has been Company A's past pricing policy? Did they price their product above the general market price when in a sellers' market?

Does Company A own or control sufficient transportation equipment (tank cars, hopper cars, trucks, etc.) to be able to ship to you on schedule even when transportation equipment is in short supply?

Is Company A an integrated producer? Does it own or control its sources of major materials or components?

? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

duction department's budget—accepting the dollar amount of the loss in production efficiency as a *selling expense* to keep the customer, Company H, happy. (They'll offer the same solution to compensate the purchasing record in cases where higher prices are involved.) Thus a little bookkeeping magic has apparently solved the problem. Actually, you have only succeeded in correcting one mistake by making another mistake. Who wins?

All Other Things Equal

Now that we have seen some of the forms reciprocity can take, let us move on and examine carefully the familiar phrase "all other things being equal", which crops up in almost all cases where reciprocity commands consideration.

If "all other things are equal" as between several sources of supply, then reciprocity can logically be practiced (see example 1). But all other things are rarely equal. And in the reciprocity-minded company it is the purchasing agent, not the sales manager, who is in the best position to determine whether all other things *are* equal between your favored customer company and other producers of the same product, as a source of supply. Beyond that, it becomes a problem of weighing the sales advantage against other disadvantages.

The fact that delivered prices are equal, and quality is the same, does not make "all other things equal". There are many other factors to be considered here, just as in any intelligently made purchase. We cannot list them all here, but the tabulation presented herewith is a start. It cites some of the questions you may want to keep in mind when trying to decide whether all things are really equal between the customer company and your usual sources of supply

Reciprocity Can Help P. A.

If you have read this far, you probably have the picture of reciprocity as a millstone around the neck of today's purchasing agent. That can certainly be true in companies where reciprocity is not controlled intelligently. But it is not the whole picture. The alert purchasing agent who is playing on the management team is interested in any reasonable approach to reciprocity which will help the company as a whole. In many cases he may find that reciprocity can be a help to him during a seller's market.

If this kind of reasoning seems contradictory and confusing, let us explain how the reciprocity "ugly duckling" (in a buyers' market) changes into a "goose that lays a golden egg" (in a sellers' market). In a buyers' market you, as purchasing agent, through intelligent buying practice—including a reasonable consideration of reciprocity—help your sales manager sell the company's products; in other words, purchasing helps sales to do its job. In a sellers' market, when your major items required are in short supply, voluntarily allocated by the producers, your sales manager can help you obtain the products and quantities your company requires; in other words, sales can help purchasing to do its job.

Let us say that we have just moved from a buyers' market into a sellers' market. Refer back to our first example, "Buying from your company's friends". In the recent buyers' market, after giving some consideration to reciprocity, you started buying some of your requirements of Product X from Company A, a good customer of yours, who was then eagerly looking for business. Now that the sellers' market is back, Company A is no longer anxious to sell you; in fact, they have gone through some arithmetical hocus-pocus in their sales department and have decided that they can supply you with only half as much of Product X during the coming year as they did last year. It is at this point that you call in your sales manager—or call the purchasing agent of Company A directly—and talk to him about exercising what might be termed reverse reciprocity.

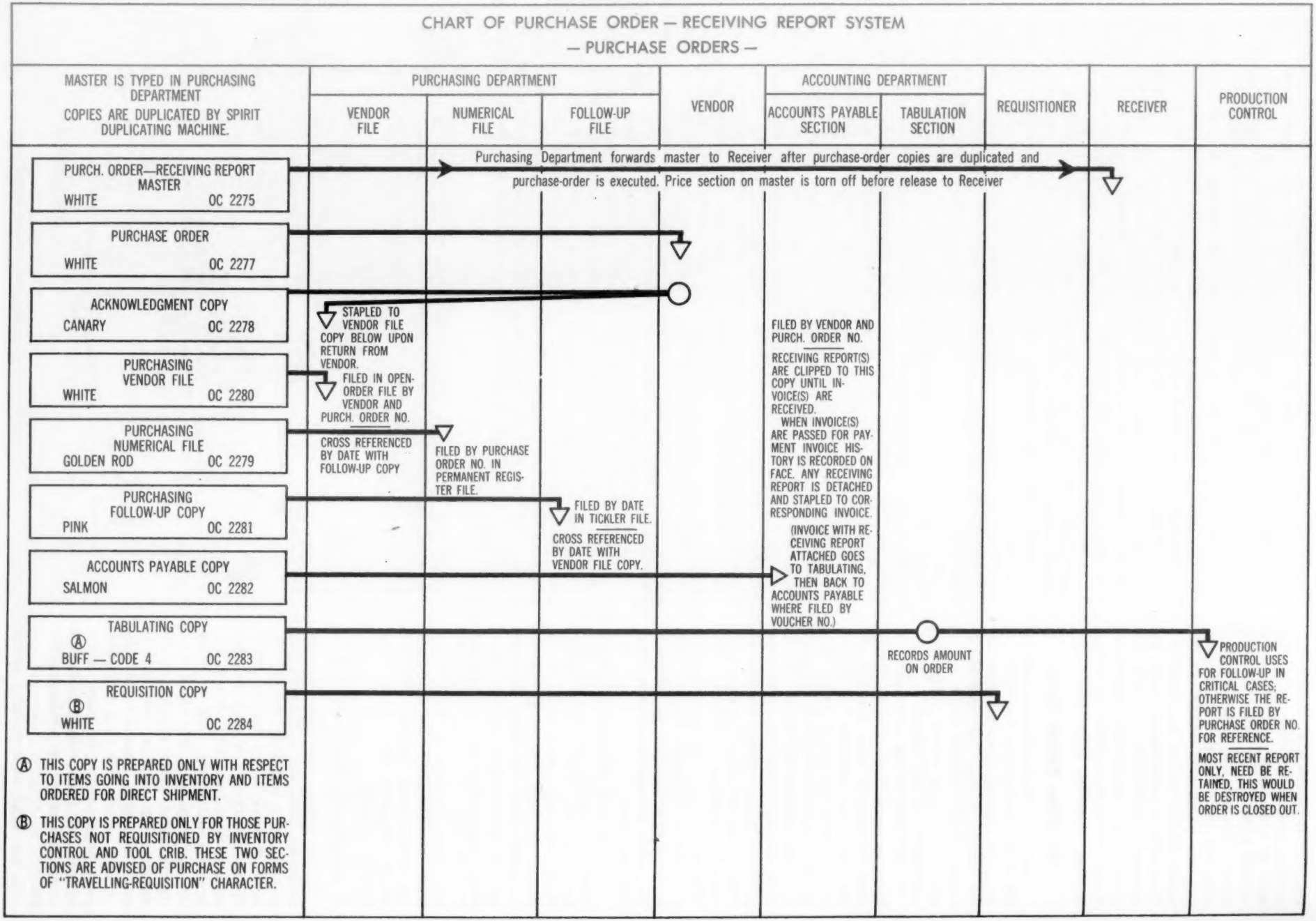
Company A must be made to realize that we helped them in a buyers' market and we need their consideration and help now in a sellers' market. If they won't sell us the full amount of Product X that we need and deserve, then it will be necessary for us to cut back our sales to them of our Product Y, which is one of their key production items. Instead, we will sell Product Y to Company C or D, who are ready to buy from us and are, in turn, in a position to supply us with the Product X that we need.

Now of course, this is merely putting the shoe on the other foot, according to circumstances. But this brighter side of reciprocity (from the purchasing viewpoint) is a side that is often overlooked by purchasing agents. Yet it is a fair and reasonable approach in the light of our experience. If there is any merit in this linking of patronage and friendly business relationships, it ought to work both ways.

Keep this in mind, and make a point of it with your management and sales manager. Show him that reciprocity is every bit as important in a sellers' market as it is in a buyers' market. By hammering away at this point, you will discourage or eliminate many reciprocity deals. When your sales manager and his customers find out that they have a *responsibility* to help you when goods are scarce, as well as a lever to use upon you when customers are the scarce commodity, they will be very careful about the kind and the number of reciprocity deals they submit to you, and urge on you, as a sales tool in a buyers' market.

"I see they've got a new P.A. over at Acme."

CHART OF PURCHASE ORDER — RECEIVING REPORT SYSTEM
— PURCHASE ORDERS —


MASTER IS TYPED IN PURCHASING DEPARTMENT
COPIES ARE DUPLICATED BY SPIRIT DUPLICATING MACHINE.
PURCHASING DEPARTMENT
VENDOR FILE
NUMERICAL FILE
FOLLOW-UP FILE
VENDOR
ACCOUNTING DEPARTMENT
ACCOUNTS PAYABLE SECTION
TABULATION SECTION
REQUISITIONER
RECEIVER
PRODUCTION CONTROL
Purchasing Department forwards master to Receiver after purchase-order copies are duplicated and purchase-order is executed. Price section on master is torn off before release to Receiver
PURCH. ORDER—RECEIVING REPORT MASTER
WHITE OC 2275
PURCHASE ORDER
WHITE OC 2277
ACKNOWLEDGMENT COPY
CANARY OC 2278
STAPLED TO VENDOR FILE COPY BELOW UPON RETURN FROM VENDOR.
PURCHASING VENDOR FILE
WHITE OC 2280
FILED IN OPEN-ORDER FILE BY VENDOR AND PURCH. ORDER NO.
PURCHASING NUMERICAL FILE
GOLDEN ROD OC 2279
CROSS REFERENCED BY DATE WITH FOLLOW-UP COPY
FILED BY PURCHASE ORDER NO. IN PERMANENT REGISTER FILE.
PURCHASING FOLLOW-UP COPY
PINK OC 2281
FILED BY DATE IN TICKLER FILE.
CROSS REFERENCED BY DATE WITH VENDOR FILE COPY.
ACCOUNTS PAYABLE COPY
SALMON OC 2282
FILED BY VENDOR AND PURCH. ORDER NO.
RECEIVING REPORT(S) ARE CLIPPED TO THIS COPY UNTIL INVOICE(S) ARE RECEIVED.
WHEN INVOICE(S) ARE PASSED FOR PAYMENT INVOICE HISTORY IS RECORDED ON FACE. ANY RECEIVING REPORT IS DETACHED AND STAPLED TO CORRESPONDING INVOICE.
(INVOICE WITH RECEIVING REPORT ATTACHED GOES TO TABULATING, THEN BACK TO ACCOUNTS PAYABLE WHERE FILED BY VOUCHER NO.)
TABULATING COPY
Ⓐ
BUFF — CODE 4 OC 2283
RECORDS AMOUNT ON ORDER
PRODUCTION CONTROL USES FOR FOLLOW-UP IN CRITICAL CASES; OTHERWISE THE REPORT IS FILED BY PURCHASE ORDER NO. FOR REFERENCE.
MOST RECENT REPORT ONLY, NEED BE RETAINED, THIS WOULD BE DESTROYED WHEN ORDER IS CLOSED OUT.
REQUISITION COPY
Ⓑ
WHITE OC 2284
Ⓐ THIS COPY IS PREPARED ONLY WITH RESPECT TO ITEMS GOING INTO INVENTORY AND ITEMS ORDERED FOR DIRECT SHIPMENT.
Ⓑ THIS COPY IS PREPARED ONLY FOR THOSE PURCHASES NOT REQUISITIONED BY INVENTORY CONTROL AND TOOL CRIB. THESE TWO SECTIONS ARE ADVISED OF PURCHASE ON FORMS OF "TRAVELLING-REQUISITION" CHARACTER.

When and How to Use a Hectograph-Master System in Purchase Order Writing

By Verner C. Vite, Systems Engineer

THERE are many conditions under which a hectograph-master system of purchase order-receiving reports can save time, money and labor. It has been the writer's experience that such a system provides economy, better control, accuracy, and speeded-up processing.

In a wartime munitions plant, for example, the hectograph-master system replaced the old method of typing an eleven-part continuous order form on an electric typewriter. The new system not only permitted rapid reproduction of purchase orders, but also of all necessary receiving reports. When more copies were needed, the master was available to duplicate them.

The duplicating eliminated much of the typing and comparing formerly necessary. Auditors computed a saving of 30,000 clerical hours per year—the time of 15 clerks.

When to Use the System

There may be, however, conditions where a hectograph-master system is not recommended. For example, (1) where there is little or no occasion to create extra copies of purchase order; (2) where there is no need to make up requests for quotation; (3) where partial deliveries are not a problem.

Before adopting the duplicating method, a careful survey should be made of these points:

1. The per cent of partial deliveries to deliveries as a whole.
2. The time involved in handwriting of receiving reports.
3. The time involved and duplication of effort in posting receipts to the open-file copy of the purchase order or other records in the receiving, accounts payable, and production control departments.
4. The time now spent in retyping and comparing purchase orders.
5. The per cent of orders on which you obtain competitive bids.
6. The per cent of receipts containing rejected material which bring requests for credit.

With such a survey as a basis, consider these advantages of the hectograph-master system:

1. Three different papers can be substantially prepared from the master — requests for quotations, purchase orders, and debit memoranda. All necessary copies are made without retyping except to type in the name of each prospective vendor on the quotation requests, and a variable side master in the case of debit memoranda.
2. The purchasing department has legible copies (of good weight) for filing purposes, no matter how many copies of the order are needed.
3. It is easier to type and correct a master than to correct a multipart one-time carbon form.
4. The unit masters can be typed by several typists on ordinary typewriters.
5. The purchasing department does not have to trans-post receipts to the open-file copy of the purchase order. In the case of partial deliveries, this takes a lot of time.

Receiving Section Also Benefits

6. In the receiving section, the system minimizes hand entries and entirely eliminates hand-written receiving reports. Even in a small factory this will save the time of one or more clerks.
7. Trans-posting of receipts to file copies of purchase orders is also eliminated for some receiving and accounts payable departments. In the aggregate, ending this operation may save the time of three clerks in a moderate size factory. It also promotes accuracy, since continual transfer of figures from one record to another may cause errors.
8. All partial deliveries, accumulated item by item, are recorded on each successive set of receiving reports. Thus, you don't have to match up receiving reports with copies of the purchase order since, generally speaking, you only have to retain the pertinent copy of the latest receiving report. The exception is where the accounting department may prescribe that a separate receiving report be attached to each invoice passed for payment.

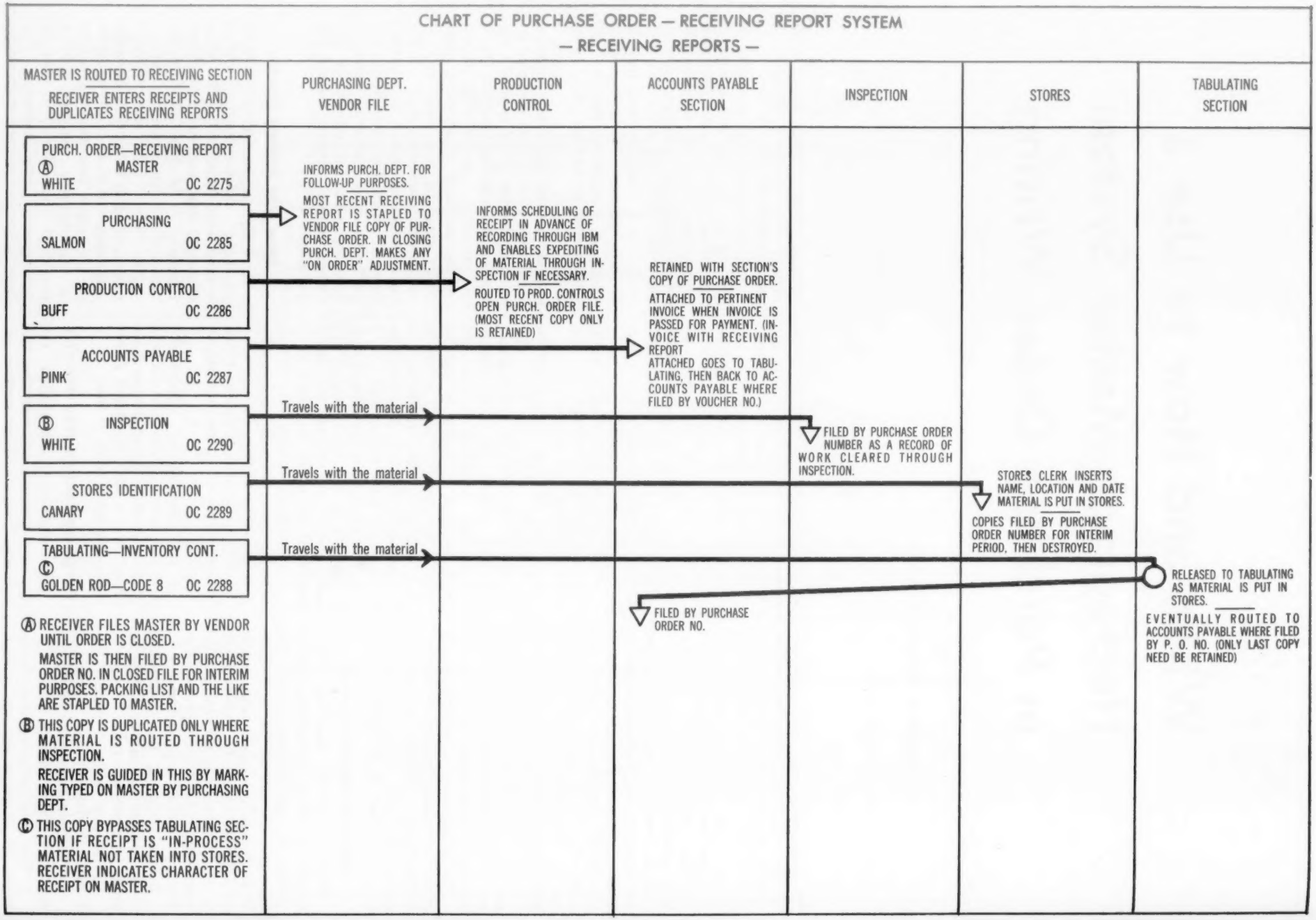
How One System Works

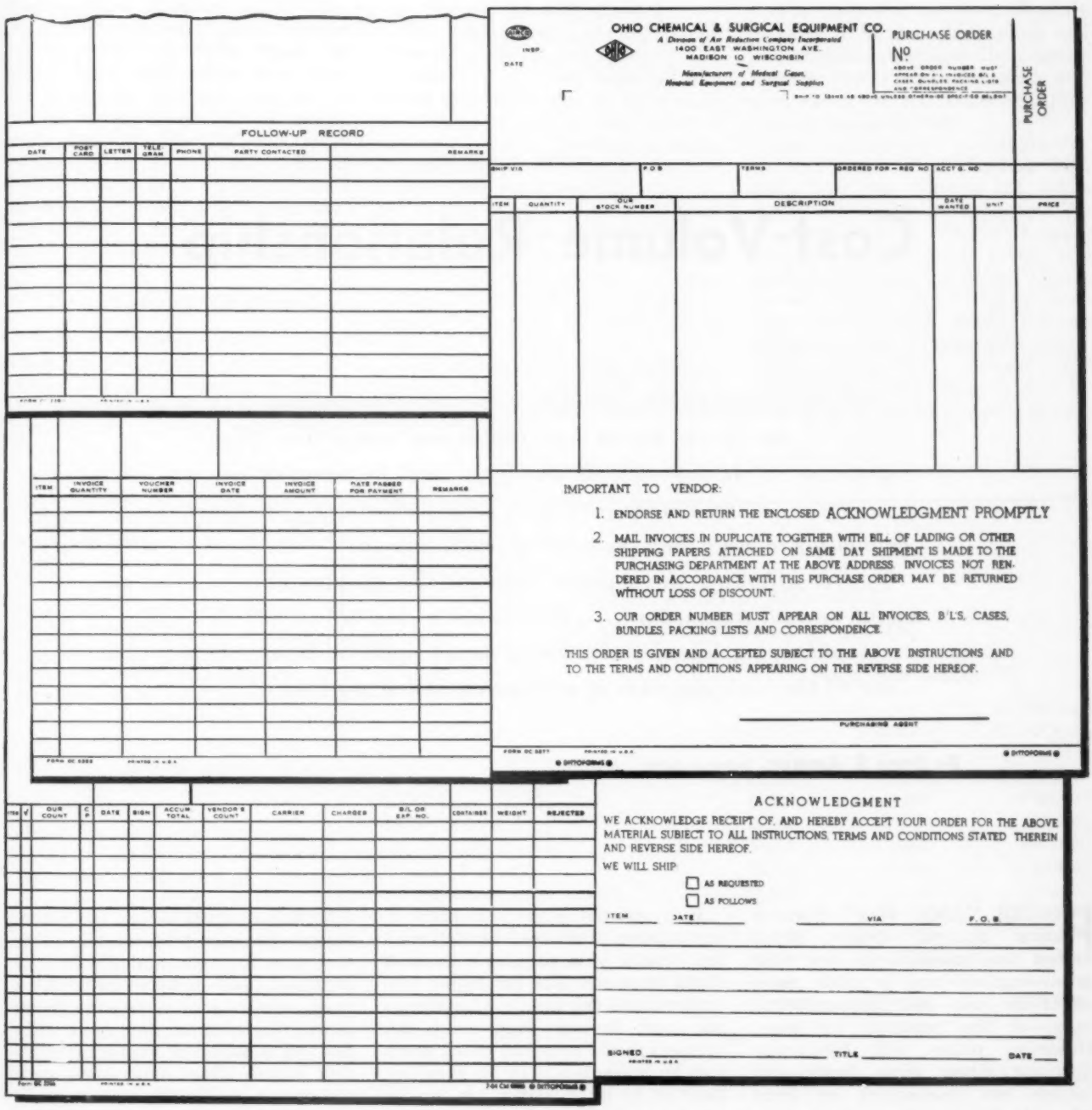
Recently, a hectograph master purchase order-receiving report system was installed at the Ohio Chemical and Surgical Equipment Company of Madison, Wis., a division of Air Reduction Co., Inc.

The master form was designed to record up to 15 partial deliveries. Assuming that there is but one item on the order, this could take care of one delivery per day over a period of three weeks, if such an arrangement were necessary. The form is illustrated here, with varia-

CHART OF PURCHASE ORDER — RECEIVING REPORT SYSTEM

— RECEIVING REPORTS —


MASTER IS ROUTED TO RECEIVING SECTION
RECEIVER ENTERS RECEIPTS AND DUPLICATES RECEIVING REPORTS
PURCHASING DEPT. VENDOR FILE
PRODUCTION CONTROL
ACCOUNTS PAYABLE SECTION
INSPECTION
STORES
TABULATING SECTION
PURCH. ORDER—RECEIVING REPORT
Ⓐ MASTER
WHITE OC 2275
PURCHASING
SALMON OC 2285
PRODUCTION CONTROL
BUFF OC 2286
ACCOUNTS PAYABLE
PINK OC 2287
Ⓑ INSPECTION
WHITE OC 2290
STORES IDENTIFICATION
CANARY OC 2289
TABULATING—INVENTORY CONT.
Ⓒ
GOLDEN ROD—CODE 8 OC 2288
INFORMS PURCH. DEPT. FOR FOLLOW-UP PURPOSES.
MOST RECENT RECEIVING REPORT IS STAPLED TO VENDOR FILE COPY OF PURCHASE ORDER. IN CLOSING PURCH. DEPT. MAKES ANY "ON ORDER" ADJUSTMENT.
INFORMS SCHEDULING OF RECEIPT IN ADVANCE OF RECORDING THROUGH IBM AND ENABLES EXPEDITING OF MATERIAL THROUGH INSPECTION IF NECESSARY.
ROUTED TO PROD. CONTROLS OPEN PURCH. ORDER FILE. (MOST RECENT COPY ONLY IS RETAINED)
RETAINED WITH SECTION'S COPY OF PURCHASE ORDER.
ATTACHED TO PERTINENT INVOICE WHEN INVOICE IS PASSED FOR PAYMENT. (INVOICE WITH RECEIVING REPORT ATTACHED GOES TO TABULATING, THEN BACK TO ACCOUNTS PAYABLE WHERE FILED BY VOUCHER NO.)
Travels with the material
Travels with the material
Travels with the material
FILED BY PURCHASE ORDER NUMBER AS A RECORD OF WORK CLEARED THROUGH INSPECTION.
STORES CLERK INSERTS NAME, LOCATION AND DATE MATERIAL IS PUT IN STORES.
COPIES FILED BY PURCHASE ORDER NUMBER FOR INTERIM PERIOD, THEN DESTROYED.
RELEASED TO TABULATING AS MATERIAL IS PUT IN STORES.
EVENTUALLY ROUTED TO ACCOUNTS PAYABLE WHERE FILED BY P. O. NO. (ONLY LAST COPY NEED BE RETAINED)
FILED BY PURCHASE ORDER NO.
Ⓐ RECEIVER FILES MASTER BY VENDOR UNTIL ORDER IS CLOSED.
MASTER IS THEN FILED BY PURCHASE ORDER NO. IN CLOSED FILE FOR INTERIM PURPOSES. PACKING LIST AND THE LIKE ARE STAPLED TO MASTER.
Ⓑ THIS COPY IS DUPLICATED ONLY WHERE MATERIAL IS ROUTED THROUGH INSPECTION.
RECEIVER IS GUIDED IN THIS BY MARKING TYPED ON MASTER BY PURCHASING DEPT.
Ⓒ THIS COPY BYPASSES TABULATING SECTION IF RECEIPT IS "IN-PROCESS" MATERIAL NOT TAKEN INTO STORES. RECEIVER INDICATES CHARACTER OF RECEIPT ON MASTER.



In normal use, the master is used to produce 8 copies of the purchase order 6 copies of the receiving report. Additional copies can be made as required. By keeping duplicated data on the upper half of the form, the lower half is available for working records as required.

tions in the lower section to meet other record and processing requirements. The flow charts show the number of copies of the purchase order and receiving report made from the single master, their distribution and disposition to provide a fully integrated purchase-receiving system.

How to Do It

In hectograph duplicating by the fluid process, the carbon impression is made on the back of the master. The copy paper is dampened by the fluid as it passes through the machine and enough carbon is transferred to the copy paper to make good legible copies. The method is the cheapest short-run process for duplicating orders where a new master must be created for each order. The master with carbon is relatively expensive, however, and for greatest economy maximum use should be striven for.

The master should be designed so that all purchase-order information can be typed on the upper half. The lower half should be designed to record receipts with a minimum of writing.

Serial numbers should be printed on the masters and carbonized so that the number will duplicate on all copies of both purchase orders and receiving reports. This is the only numerical identification. Because a master occasionally has to be retyped, and it is desirable to keep the numerical sequence, a moderate supply of unnumbered masters is printed. In retyping, the original serial number is inserted.

(*Please turn to page 222*)

Cost-Volume Relationship

Overhead cost factors, in relation to production volume, can be the key to a profitable and competitive price structure . . . In the example here presented, increased volume made possible a price reduction to the buyer amounting to more than the original profit margin yet affording the supplier substantially greater profit on the over-all transaction . . . This is not a case of bookkeeping legerdemain, but a sound application of one of the basic elements of production cost accounting

By Dean S. Ammer, Technical Editor

PRICES VARY. Why? Because costs change. Every buyer knows that changes in raw material markets and in labor rates affect the cost—and ultimately the price—of the products he buys. However, prices will frequently fluctuate when these basic cost factors are unchanged, or even when they have been moving in the opposite direction to the price change.

A buyer alert to such "special situations" can occasionally get a price reduction which exceeds the manufacturer's margin of profit—and the manufacturer can be quite happy about it even though his raw material costs and labor rates haven't changed! That may seem like a paradox. What is the advantage of such a deal to the manufacturer? What is the point of taking business on which money will be "lost"?

The answer to these questions lies in the vendor's internal manufacturing cost structure—in the tricky but very real factor of overhead costs and their relationship to manufacturing volume.

It is not the buyer's problem or prerogative to concern himself with the details of a supplier's costs of doing business. But the buyer who understands the nature of underlying cost factors that make for changes in the prices at which goods can be marketed is in an excellent position to do a better job for his company, and maybe to help his supplier at the same time.

An understanding of the relation between unit costs and production volume is essential to every manufacturing concern. It is also invaluable to the buyer looking for opportunities to purchase for profit. To better understand this relationship, let's take a somewhat oversimplified example, worked out in round numbers for easy figuring.

Vendor's Cost Problem

Let us imagine that we operate a small plant, manufacturing precision headed pins. Business is currently pretty good. We're selling 100,000 pins at $1 each, for a total sales volume of $100,000. Our manufacturing costs (see Table I) consist of $15,000 for raw materials, $20,000 for direct labor (the wages we pay the men who actually make the pins for us), and $50,000 for overhead (all factory costs other than direct material and direct labor). In addition, we have sales and administrative expenses totalling $5,000. Thus, with total costs amounting to $90,000, we are making $10,000 profit on our $100,000 sales volume.

Then, suddenly, our sales drop to $50,000. What happens to our costs? Assuming that we don't have to pay higher unit prices for raw materials because of reduced usage, we can cut material costs 50%, to $7,500.

When we try to cut direct labor costs back 50% in line with lower sales and output, we encounter difficulties. We can't cut wage rates, which are generally in line with those prevailing in our area. Besides, we have a union contract, so we couldn't do it even if we wanted to. We can't lay off 50% of production help or arbitrarily reduce working hours by one half either. Why not? Because it happens that our production line has been

engineered to produce 100,000 pins at its most economical level in terms of man-hours of direct labor. As soon as we drop below that level we begin to lose productivity. If we try to produce half as much, each worker's job is no longer broken down so minutely into its basic elements and he cannot work as efficiently. Consequently, the best we can do is to cut direct labor costs from $20,000 only to $11,000.

Three Types of Overhead

Now we analyze our overhead costs and really start getting headaches. When our sales were $100,000, our $50,000 overhead was distributed as follows: fixed overhead, $25,000; non-variable overhead, $10,000; and variable overhead, $15,000.

Fixed overhead means exactly what the term imples. It includes costs that must be paid regardless of how much the plant is producing. Real estate taxes and certain insurance premiums keep right on coming due. The building continues to depreciate. Certain types of personnel must be kept on the payroll —watchmen, engineers in the boiler room, etc. Thus even though our sales and operations may be down 50%, the fixed overhead remains unchanged at $25,000.

Non-variable overhead is not quite as rigid. Non-variable costs are those which, though they will vary slightly with production (unlike fixed overhead), do not vary directly with it, like direct material. For example, with production of $100,000 worth of pins, we need one inspector and three material handlers. A cutback of 50% indicates a need for one-half inspector and one and a half material handlers. Obviously, we must use one inspector and two material handlers. Thus we can only cut our non-variable overhead from $10,000 to $6,000.

Variable overhead includes costs which vary in direct relation to production volume. Examples are perishable tools, most utility services, packaging materials, inbound freight, and certain taxes. So our variable overhead can be cut 50%, to $7,500.

In total, then, our $50,000 overhead can be reduced to $38,500.

Sales and administrative expenses include both fixed and variable cost elements. Consequently, we are only able to reduce them from $5,000 to $3,000.

On sales of $50,000, we now have costs totalling $60,000. We're losing money.

Prices Up with Costs?

The easiest way to cut losses is to raise prices in line with the increased costs. If we could sell our 50,000 pin production at $1.20 each we'd come out even; we'd have to go even higher than that to make a small profit. Unfortunately, our competition rules out that easy solution. Our salesman finds out from the customer's purchasing department that we have already been losing business because our price is high. No price increase. We would simply be putting ourselves out of business.

Our salesman believes, however, that our volume could be restored to the previous level with a price cut of 5%. Although our profit of $5,000 after the price cut would be only half of what it formerly was, but this is better than the losses we face on sales of 50,000 pins.

Another Solution

The buyer, understanding the relation between costs and volume, makes another suggestion. Being an imaginative fellow, he gives the salesman specifications and prints for a plug which he needs in the same quantities as pins. If the price is right, he can place orders for 100,000 of each.

The buyer knows that the plugs can be made on the same equipment as the pins. He is also reasonably certain that we have adequate capacity to produce both plugs and pins in these quantities. He suggests that we figure prices for plugs and pins based on the combined production of both parts.

On checking with our engineers, we find that we can produce both plugs and pins without any additional investment in facilities. We go to work on the cost sheets again. Direct material, direct labor, and variable overhead costs will double as we double output. But over-all costs are less than double because fixed overhead remains unchanged, and non-variable overhead and administrative expenses increase by less than 100%. Our cost estimate (see Table I) indicates that we can make 100,000 pins and 100,000 plugs for a total cost of only $152,000.

Now we add the same percentage of profit (10% on sales) that we formerly enjoyed. Since (by convenient assumption) pins and plugs are identical, costwise, we find that we can now sell each pin and plug for 84.4¢, and still make the same margin of profit. With the expanded volume, our profits will be $16,888 —or nearly 69% greater than they were when we were selling only 100,000 pins at a higher price. The buyer has also benefited, since his prices have been reduced by nearly 16%.

(*Please turn to page* 258)

Table I

COSTS, PROFITS, AND PRICES AT VARIOUS PRODUCTION LEVELS

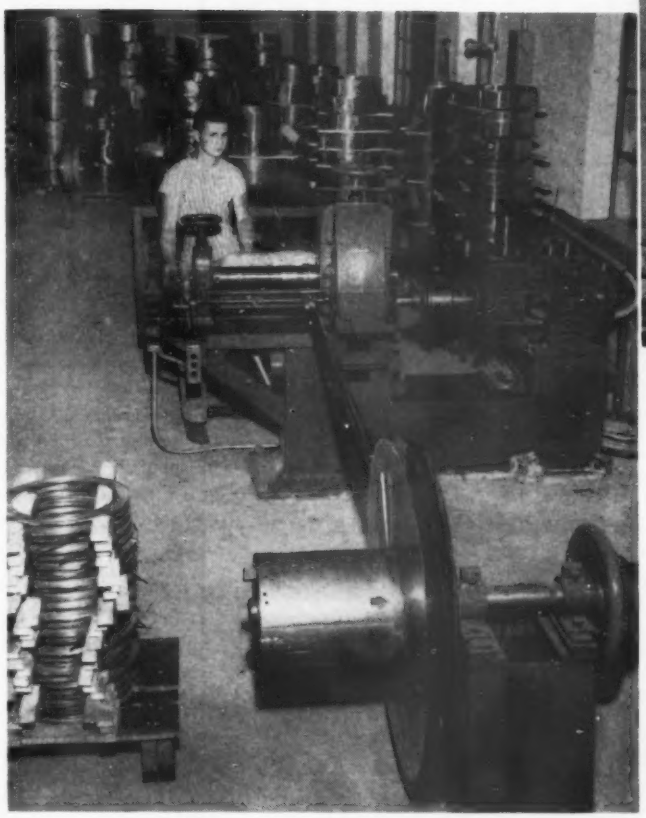
	Production Volume		
	100,000 Pins	50,000 Pins	100,000 Pins & 100,000 Plugs
Direct Material	$ 15,000	$ 7,500	$ 30,000
Direct Labor	20,000	11,000	40,000
Fixed Overhead	25,000	25,000	25,000
Non-Variable Overhead	10,000	6,000	18,000
Variable Overhead	15,000	7,500	30,000
Sales & Administrative Expense	5,000	3,000	9,000
TOTAL OPERATING COSTS	$ 90,000	$60,000	$152,000
Profit	10,000	—10,000 (Loss)	16,888
Dollar Sales	$100,000	$50,000	$168,888
Unit Price of Pins and Plugs	$ 1.00	$ 1.00	$ 0.844

Stainless Steel by the Pound

Nobody has yet found the way to eliminate troublesome small and special orders . . . but here is one vendor who has made a virtue of others' necessity . . . Its facilities and operations are geared to efficient handling of the sort of requests that others reject, or can produce only at excessive cost . . . Quantity discounts? No; in this plant, big volume orders are subject to quantity extras

Stock of cold-rolled strip alone averages more than half a million pounds and includes gauges from .003 to .150

Fred Ulbrich, founder of the company, checks results of a Rockwell hardness test on a small order of stainless strip.



Slitting equipment, specially adapted, permits slitting to finer tolerances than required by commercial standards.

More than half the orders are handled over the telephone. In many instances, goods are shipped before the confirming purchase order has gone through regular processing. May D. Warzocha, office manager, handles most of the telephoned orders.

SMALL and emergency orders are a problem to buyers and vendors alike. But when it comes to stainless steel strip, there's at least one vendor who won't handle anything else.

Ulbrich Stainless Steels, Wallingford, Conn., specializes in stainless strip orders of one pound up to 500 pounds—at standard industry prices. Anything over 500 pounds is subject to quantity extras. The size of the orders handled, however, is only one aspect of this unique service. Ulbrich will take the order—whether for one pound or 500— and convert material from an extensive stock to the customer's exact requirements in finish, temper, type, gauge, edge, width and length. The plant is equipped to cold-roll, slit, bevel, coil, flatten, shear, polish, and perform many other operations that may be required on a special order.

Such service, with an average delivery time of a week, brings Ulbrich a steady stream of orders from the 48 states and Canada. Customers generally fall into two classes, the smaller company using limited amounts of stainless, and the larger company requiring small quantities of stainless with unusual specifications. With the rapid advancement of technological progress and the increasingly complex needs of defense production, Ulbrich has more than quadrupled its sales since 1949.

The company uses no salesmen, but is a steady advertiser in trade journals. Its orders come in by mail, telegraph, and telephone, with emphasis on the latter. Shipments are made by the fastest means available—and a normal day will see orders go out of the plant via air express, parcel post, railway express or truck. Ulbrich's long experience with the metal and its specially arranged facilities for handling take the risk out of "rush" and emergency orders. Included in its "tailor made" service is a free certification on origin, heat number and chemical or ladle analysis of any material supplied.

A Small Order Steel Mill

Ulbrich actually is a small order steel mill and is listed as a key producer in leading trade papers in the metal industry. Backing up its extensive inventory is a battery of converting equipment that insures exact dimensions on stainless strip, the "prima donna" of the industry as far as tolerances go.

The company's rolling mills provide stainless in any Rockwell temper from dead soft to ultra full hard. They can cold-roll strip to any given gauge or thickness. Ulbrich can slit stainless strip to plus

COLD ROLLED
STAINLESS STEEL

FERROUS ALLOY
SPECIALTIES

ULBRICH STAINLESS STEELS
ESTABLISHED 1924
STAINLESS STEELS
OLD COLONY ROAD
WALLINGFORD, CONNECTICUT
PHONE 9-7771

To: The A. B. C. Corporation
123 Main Street
Denver, Colorado

Your Order: 409393

Our Invoice: 9209

Material: .050 x 1/8" x T420 x Soft x Coil

This is to certify that the following analysis applies on our shipment as shown above:

Heat Number	30708
Carbon	.34
Manganese	.44
Phosphorus	.021
Sulphur	.025
Silicon	
Chromium	14.00
Nickel	00
Columbium	
Molybdenum	
Selenium	
Titanium	
Copper	

Sworn and subscribed to before me
this 21st day of September, 1954
M. D. Waynocka
Notary Public

FRED ULBRICH & SONS
By Fred Ulbrich Jr.

ESTABLISHED 1924

Exact quality specifications are characteristic of special requirements. Ulbrich furnishes a notarized analysis of material furnished on every order.

or minus 0.0002" if required. And strip can be slit narrower than it is thick—.062" wide (not thick) is not unusual for Ulbrich although it is extremely rare in the trade. Rewinding can be done on strip whether the inside diameter is 3" or two feet, and proper pull and tension are used to prevent stretching or kinking.

A day's business at Ulbrich is full of oddities in this age of mass production and heavy orders. A West Coast aircraft parts maker, for example, spent twenty minutes on the telephone ordering two pounds of a special type strip. He got what he wanted and was happy to pay more for the call than for the steel. A small tool shop wanted a special type of material 1" wide and 36" long. Only Ulbrich, of a great number of potential vendors called, could supply it. The total order was four pieces. The maker of the atomic submarine "Nautilus" inquired all over the country for a small quantity of certain type 316 stainless for railings on the submarine. Ulbrich, among many, received the inquiry—and was the only one able to supply the item.

Fred Ulbrich, founder of the company, has been in the stainless business since the metal first became commercially available. He knows there will always be a market for this kind of service. "A majority of the people who call us are 'in a jam'," he says, "but that's just what we are in business for. In many cases they are not sure just what they want, and we can help them solve their problems. The small order business is too expensive for the mills—but we're equipped to handle it. Because of the peculiar nature of this business, we don't make money on every order—but we haven't turned one down yet."

Better Purchasing System for Distributor Items

A regional distribution system within a nation-wide distribution system reduces costs and inventories, improves service, and benefits both the buyer and the vendor.

An interview with Lucien W. Moore, Vice President, Purchasing, Crane Co., Chicago, Ill.

LUCIEN W. MOORE has been with Crane Co. for more than 32 years, having spent 20 years in important positions in Crane's foreign subsidiaries in France and Belgium prior to his appointment to head the company's purchasing activities.

A NEW purchasing plan covering procurement of merchandise which Crane Co. (Chicago) sells through its branches has been inaugurated by the company. Designed to lower costs to both Crane Co. and its suppliers, give better service to Crane customers, and reduce the branch inventories, the plan was first put into operation in a few areas of Crane's nation-wide distribution system. It has recently been extended to cover the entire United States.

Crane Co. maintains 151 branches in the United States, stocking Crane manufactured products and also products manufactured by others. Originally, all orders for purchased products were placed by the 151 branches with sources of supply approved by the Purchasing Division in Chicago. With the new system, 47 branches have been designated as Supply Branches, in addition to their customary wholesaling function. These 47 Supply Branches have been picked, after thorough geographic and supply studies, to become the "parent" from which surrounding branches requisition merchandise.

Through this new method, the over-all inventory of goods is reduced, since only 47 branches maintain large stocks, from which they service the requirements of the smaller branches in their area.

Purchasing arrangements with vendors are made by the Purchasing Division buyers at the Chicago office. Bulletins announcing the selection of vendors and their prices, and competitive items that may be purchased by Crane branches, are then sent to the branches which formerly ordered their own stock

replenishment in smaller quantities. Within the eight sales districts, there are eight inventory supervisors, one for each district, reporting to the respective district managers. These men maintain constant contact with all branches to advise on quantities and items of purchase, as well as service between Supply and Service Branches and to customers.

Through the new system, Crane Co. is able to take greater advantage of quantity discounts on large purchases, and freight allowances where vendors' terms of sale specify minimum quantities required for such allowances. The vendors profit through larger orders, instead of being required to handle the many small and time-consuming orders they received under the former system.

"The purchasing philosophy of Crane Co. for 100 years," Mr. Moore states, "has been to keep a constant working inventory. Specifications have been established by the Engineering Division to cover purchases of raw materials and parts in order to insure keeping standards of quality at top levels and to maintain the company's manufacturing reputation in its high position."

Crane Co. is not interested in speculating in the purchase of materials. It is mostly concerned with keeping its inventory in balance, consistent with seasonal demands and business conditions.

There are two heads of buying departments for the Chicago Works' manufacturing requirements, in addition to the jobbed products buying department which is engaged exclusively in the purchasing of merchandise for resale by the branches.

One man, with his assistant, purchases raw materials required by the Manufacturing Division, such as pig iron, brass ingots, coal, coke, lubricating oils, gasoline, zinc, ferro alloys, and iron and steel scrap. No requisitions are sent to him; it is his responsibility to keep himself well informed on the rate of plant operations and the lead time for purchasing such materials. He knows the anticipated rate of production and then keeps inventories balanced.

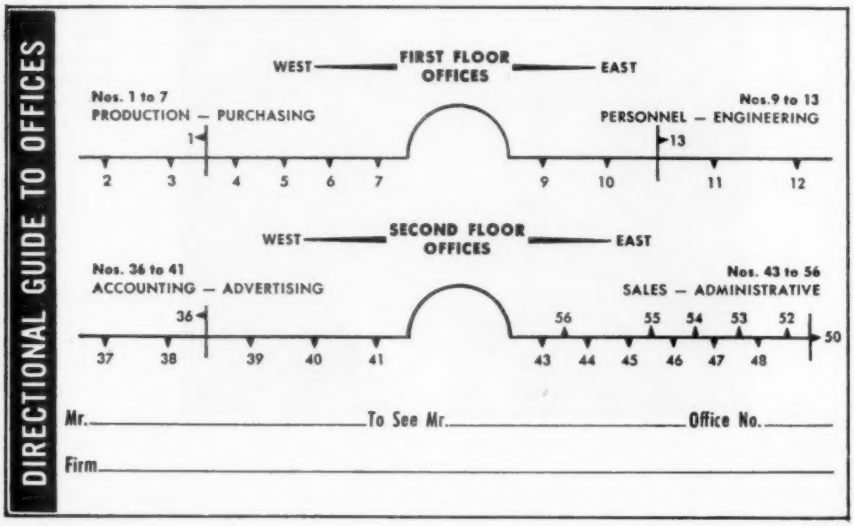
Through the other buyer, who has several assistant buyers working with him, the company purchases such things as steel, brass mill products, molding sands, electrodes, maintenance items, supplies, electric motors, springs, and component parts for valves. These supplies are purchased after the Production Planning Department requisitions the materials. The buyers in this department keep the Planning Department informed of lead times, and the Planning Department requisitions the material in good time to keep a balanced working inventory for manufacturing operations.

Crane's philosophy of purchasing, which is to shop like a housewife looking for good merchandise at low cost, but never trying to drive the supplier out of business, has paid off well for the company.

"It doesn't pay us," Mr. Moore pointed out, "to try to drive such a hard bargain that our suppliers go out of business after dealing with us. We are in a good position only so long as our suppliers are making a profit and our customers are solvent."

During World War II, Crane Co. was able to keep its Manufacturing Division operating at full capacity, at all times, even when many items of material were in critically short supply. Every day, suppliers show their good will toward the company and its Golden Rule policy of purchasing.

Salesman's Guide



THE Powers Regulator Company is justifiably proud of its "dream plant" at Skokie, Illinois—"even prouder than when it was new and untried in 1951," says President H. C. Mueller, in his foreword to the booklet "This Is Powers" which is handed to business visitors. The building has fully realized the dreams of its designers as a facility for efficient administration and large scale production. Further, it was designed to provide an unusually pleasant and comfortable working environment.

That pleasant environment is immediately apparent to the visitor, too, as he passes through the glass doors into a handsome semicircular lobby furnished in lime and bittersweet with a graceful double winding stairway at the rear.

But the business visitor comes primarily on business, and Powers has a simple and unique device to help smooth his way. Along with the descriptive booklet, the receptionist hands him a "guide card" after filling in the visitor's name and company connection, the name of the person to be seen, and the office number where he can be found. The card has an outline diagram on which the location of the various departments and office numbers are indicated. With this card in hand, there's no aimless wandering in corridors and no danger of barging into the wrong office. The purchasing group has offices on the first floor, immediately off the lobby.

Three essentials of effective teamwork

What the Purchasing Agent Wants from the Engineer in Standardization

• **By William R. Murray,** Director of Materials and Purchasing, Bigelow-Sanford Carpet Company, New York

Three prominent purchasing executives were speakers at the 36th annual meeting of the American Standards Association in New York, November 16th. Left to right: Nelson J. Gibbins, Motor Wheel Corporation, Lansing, Mich.; E. H. Weaver, Union Oil Company of California, Los Angeles; and William R. Murray, Bigelow-Sanford Carpet Company, New York, whose address is presented herewith.

STANDARDIZATION represents the application of good, common horse sense to the many problems we encounter in our everyday work. The engineers were chiefly responsible for starting this program. Today, everybody is getting into the act—and rightly so. We all have a growing self interest in it. It is safe to say that engineers will find standardization being urged on them, rather than being obliged to sell it to the organization.

As engineers and purchasing men, we each have problems which are exclusively our own, but we also have a great many which should be mutual. Our objectives, for the most part, are identical. We want good materials and tools, low costs, and a good end product which can be sold at a profit.

Where, then, do we come into conflict? It must be within a very small area, and in a low percentage of the transactions which pass between engineering and purchasing.

Naturally, every purchasing agent thinks first of availability and price. Where can he buy what engineering has specified? How many suppliers are making the item—or how many can and are willing to make it in the quantity and quality which the company's production schedule requires? Are the potential suppliers reliable, and does their ability to make the item satisfy both engineering and purchasing?

If, as sometimes happens, there is only one supplier who meets these qualifications, where does that leave the purchasing agent? He has no opportunity to test the market to make sure his price is what it should be. Should the item be an important factor in production and sales, what is he going to do if that supplier should be interrupted by a strike, fire, or flood?

These are purchasing problems, true enough, but they are very real. And he is not going to be very happy over the situation. He may

feel that engineering could have given the problem more consideration before issuing the specification. Perhaps in some cases the item could have been made slightly different so as to provide more availability and lower cost. If that is really so, it does not seem to be an insurmountable problem for two departments which should be working hand in hand. If, on the other hand, the item simply has to be as specified and there is no other way out—that, again, should be explainable and certainly create no basis for disagreement.

When I talked with some of my colleagues about what purchasing agents want from engineers in standardization, it was amazing to find what entirely different concepts each of us had as to the meaning of standards and standardization; yet each of us was sure he knew what the words meant. It was clear we needed a definition—we had to establish a standard.

Benjamin Melnitsky, in his book, *Profiting from Industrial Standardization*, puts it in a way that is brief, yet "firm and fully packed." He says:

"Standards are practicable, profit-provoking solutions to recurring problems. Established tentatively, they are couched in objective terms and are based on the consent of those affected. They facilitate and often promote general usage of the best thoughts and practices on the subject being standardized. Standardization is an evolutionary process whereby standards are established. . . . The final test of a standard is the degree to which it is accepted and used without external pressures. It should be of such obvious desirability and its benefits so completely self-evident that it requires no policing. The manifest difficulty of this underlies the necessary slowness of the standards development process. The firm which overnight produces an encyclopedic book of purchasing specifications, standard testing methods, standard inspection practices, etc., is probably paying little heed to the consensus principle. Almost certainly, it will gain little for its efforts."

In other words, you don't standardize merely for the sake of standardization. It must fulfill a sound purpose. You never do it for regimentation. It is not the intent of standardization to stifle creative ability or ingenuity. It is a device to reduce to routine those problems which keep coming up again and again and require a decision each time they rear their heads. By standardizing, you settle them by a consensus of all those affected, but not necessarily forever and irrevocably. A standard which is never revised becomes a dead duck. Standards should be dynamic—never a shelter for lazy thinking.

Now, taking standardization from there, it was amazing how we all pretty much agreed as to what we want from the engineers. It boils down to three points. (This doesn't imply that we fail to get these things most of the time. However, it is often the one time you don't get it that seems to cost a lot of trouble and money.)

1. An open mind on the revision of existing standards to provide for change or substitution in whole or in part.

This brings to mind suggestions for improvement or cost reduction which might come from suppliers. The change could pertain to design, type of material, finish, packaging, or even the method of testing. Or the suggestion might originate in your own organization. Wherever the idea comes from, purchasing seems to become involved. Regardless of who starts the fight, somehow we always seem to be in one of the front lines, either defending an existing standard or crusading for a new one. This may not be conducive to a long life, but it keeps life from getting dull.

Two examples come to mind. In the first, testing methods were the issue. ASTM has a test procedure for a certain material. Most of the suppliers use it. The buyers, for various reasons, do not like it. Two or three of the largest buyers developed test methods following the war, all of them somewhat different.

One was an adaptation by our engineers of a procedure used by the armed services during the war for a similar material. In this particular case, the same procedure was adopted by the buyer for two different materials. One industry accepted it; the other did not. After innumerable meetings between engineers of the buyer and vendor, much revision of detail, and the passage of about eight years, the vendor finally admitted that the test procedure looked workable, but he would accept it only after ASTM approval. Now it has finally started through the ASTM Committee of which that particular vendor's engineer is chairman. That was strictly a battle of concepts between two groups of engineers, but it suggests the possibility, at least, of a lack of open mind.

The second example represents a substitution of one standard commercial material for another which has had long traditional use in our industry. Economic conditions have conspired to make substitution possible at a saving to us of about $500,000. Our purchasing division noted the possibility and made the suggestion. Of course you don't change the specifications of your product overnight, but that was several years ago. I suppose we would all argue loud and long that we have an open mind. But when are we going to start using it?

2. An alert awareness of and a determination to use existing commercial or industry standards except as a last resort.

Nearly every one would say that you could not fail to get full cooperation on that one. There are standards well accepted in every industry for nearly everything imaginable. But why is it that there is always some bird in every organization who seems to believe that his particular brain child must have a hole or a bolt just a few thousandths off standard or (in the textile industry) a yarn that is off standard a fraction of a count?

If you insist on a non-standard item, a lot of things happen. In the first place, you usually increase costs. You engender delays in delivery by requiring special tools or fabrication. You increase inventories, with the added risk of mix-ups and obsolescence.

We have all seen instances where these special requirements are later dropped and replaced with standard sizes, proving that it could have been done that way at the start.

3. A standard which is complete, understandable, and acceptable to more than one supplier.

The reasons for this must be obvious. No company should be tied completely to one supplier for any important product, material, or part, if the quantity and nature of the item justifies having more than one source of supply. No buyer worth his salt is going to be happy about any standard which compels him to depend on just one supplier.

Perhaps his various engineering departments feel they can estimate what the price should be. Perhaps he can even get his time study engineers into the suppliers' plant. Yet I have seen both these things happen and then—at a later date, when the restriction was lifted—I

(*Please turn to page* 224)

Editorial panel at the ASA conference.

Standards and Purchasing

By Stuart F. Heinritz

One of the sessions at the 36th annual meeting of the American Standards Association, on November 17, was devoted to a discussion of "What's ahead for standardization, through the eyes of the technical and business press." The purchasing field was represented on this panel by the editor of PURCHASING Magazine. Other participants were: John Mellecker, editor of Chemical Engineering Progress; F. J. Oliver, editor of Electrical Manufacturing; and Byron Lidgerwood, associate editor of Control Engineering. L. C. Morrow, Director of Special Editorial Services, McGraw-Hill Publishing Co., was moderator of the session.

PURCHASING men are no strangers to the principles of standardization. They have long recognized its advantages. Some of the very important projects in standards have been initiated from the purchasing side. And their interest in the subject has noticeably increased within the past few years.

In the promotion of industrial standardization, it is probable that the easiest "sale" of all has been made to this group that is traditionally the hardest to sell and the most critical of values claimed. In buying, there is no resistance to be overcome in the argument for standard vs. non-standard items. Rather, the problem has been one of overcoming inertia and stimulating active participation on a broader scale.

While there is still a long way to go in this direction, a great deal has been accomplished. Taking the group as a whole, purchasing agents are whole-heartedly for standardization. Their concern with it has gone beyond mere acceptance. They have adopted it as their own; they refer to it as a tool of purchasing. To make that tool sharp and effective, they have become one of the most active groups in promoting standardization — among their own membership, in their own companies, and in respect to the products they buy.

The National Association of Purchasing Agents is a member of the American Standards Association and maintains a national committee on standardization, with working rep-

resentatives in its nine regional districts and some 90 chapters, right down to the local level. It has prepared and distributed literature on standardization, keyed to its particular applications in the purchasing function. It has consistently and successfully encouraged consideration of this subject in purchasing conferences and programs, to make and keep buyers alert to the benefits of standards. It would be hard to find any serious purchasing meeting today where this subject is not on the agenda.

Benefits from Standards

The purchasing interest in standardization differs from that of most other industry groups in two important particulars. In the first place, the technical aspects and specific applications which are so important —and sometimes controversial—in other fields, are of secondary interest. In purchasing, these are means rather than ends. Buyers have been won over to the cause strictly on the basis of results. No purchasing man can help being enthusiastically receptive to a policy and technique that:

(a) opens up multiple sources of supply where only one existed before;

(b) provides a clear and equitable basis for competitive bidding;

(c) cuts down the number of items that have to be bought and stored, enabling one purchase order to do the work of many;

(d) speeds procurement by making an item available from shelf stock instead of waiting to get in line on a manufacturer's production schedule;

(e) reduces inventory investment, accelerates turnover, and curbs the risk of losses from obsolescence, while still maintaining the required safe margins of stock supply;

(f) eliminates the need for expensive special tooling and special operations on purchased products.

All of these are significant internal benefits that make for economical procurement, quite aside from the benefits that accrue in manufacturing operations and product cost. When these considerations are coupled with the fact that these advantages are obtainable—not at moderate cost, but at an actual saving—the sales appeal is irresistible. In their selection of products and sources, purchasing men further recognize that the supplier who practices standardization is generally an efficient, low cost producer—a good vendor to cultivate.

For these reasons alone, purchasing logically joins with technical and manufacturing departments as an advocate of standardization. But there is a second point of difference that makes purchasing agents more than advocates. They have to be salesmen. Purchasing agents buy to satisfy requirements that originate and are defined in technical and operating departments. The extent to which they can put standardization into effect is thus limited. The very nature of standardization calls for group agreement and action. But purchasing has very strong and persuasive powers of recommendation, and an equally strong incentive to exercise these powers on behalf of standards.

A Tool for Greater Value

The initiative for standardization can well come from the purchasing department. One of the recent developments that looms large in all modern thinking and practice in the field of scientific purchasing is the concept known as value analysis. This can be broadly described as the process of engineering unnecessary costs out of the products that are bought. The old method of seeking cost reduction in purchasing was through price negotiation that rarely got down to the basic costs of materials and fabrication. Those elements of the supplier's cost were regarded as the solid, impenetrable—even untouchable—price base. The new method goes deeper. It goes right down to these direct cost factors as the buyer seeks to assure himself, first of all, that he is asking for the most economical product that will do the required job, and that he is not asking the vendor to supply something that is intrinsically more costly than he needs.

The old method was limited by producers' profit margins and by the varying force of competitive pressure. The resulting negotiation became a contest, and frequently a destructive force. The advantages gained by either side were usually at the expense of the other. In the new method, reasonable profit margins are recognized as even more inviolable than direct costs. It is limited only by the ingenuity and initiative of buyers, designers, and manufacturers. The negotiation is concerned primarily with the design and construction of the item to be purchased, and the materials that go into it. Often as not, it takes place entirely within the buyer's own organization. It is a cooperative enterprise in cost reduction—one of those happy projects in which all parties stand to benefit. The results of this new approach have been sensational. It is one of the hallmarks of today's progressive, constructive, effective buymanship.

There are a number of different techniques that contribute to successful cost-saving value analysis. Among these, standardization is one of the simplest, most readily acceptable, and most potent.

Buyer's Strategic Position

In the industrial organization or in any organization where purchased materials and products are used, purchasing is in a unique and strategic position to see the opportunities for applying the principles of standardization. In the typical manufacturing operation, Department A doesn't know or care what is being used in Department B, and has no reason to be concerned about it. Product A is an entirely separate project from Product B, from drawing board to final assembly. But the material requirements for both departments, and both projects—for all departments and all projects—clear across the purchasing desk. Here the company's material picture appears in its entirety, and opportunities for standardization are disclosed. But if purchasing is to reap the advantages that have been cited, action must be taken to get together on a company-wide standards program.

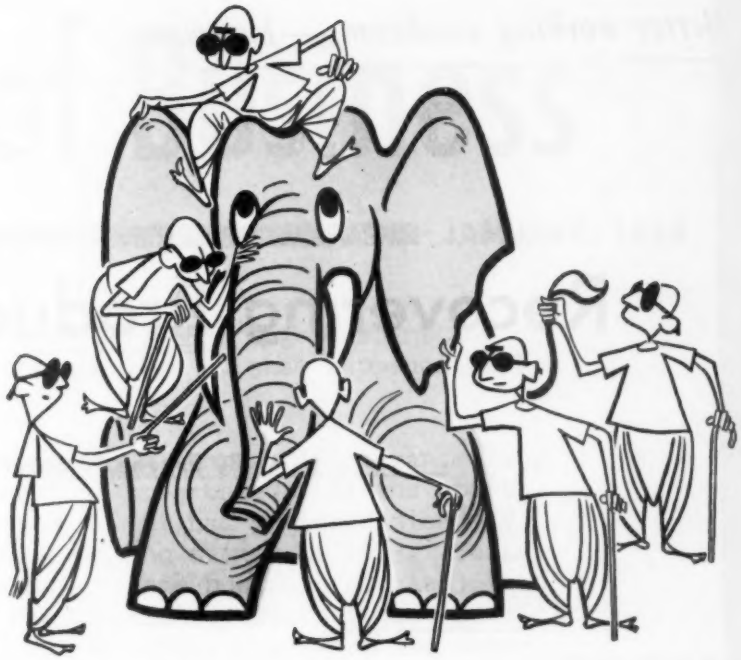
Further, in its contacts with outside suppliers and in its constant search of the markets for suitable sources of supply, purchasing is aware of industry and commercial standards with which the internal program should be coordinated, or which offer corresponding cost-saving opportunities even where duplication of use is not a factor on a particular item.

Thus it is eminently logical that standardization programs should be initiated, coordinated, and actively urged by the purchasing department. In many instances, it is a case of purchasing taking over where the technical departments have left off, to gain additional advantages.

Organizing for Standardization

More and more purchasing departments are accepting this responsibility as a constructive service to their companies beyond the mere act of buying, as well as enhancing their own performance. Usually the biggest problem is how to get started. Beyond that, there

(*Please turn to page 277*)



Phases of Purchasing

By Joseph C. Good, Assistant Purchasing Agent, Monsanto Chemical Company, St. Louis

EVERY TIME I read an article on some so-called "most important function" or duty of purchasing, I am reminded of a jingle that most of us read as children.

There were six men of Indostan
To learning much inclined
Who went to see the Elephant
(Though all of them were blind)
That each by observation
Could satisfy his mind.

The fable goes on to say that each man touched the elephant at a different place, and each concluded from his experience what sort of animal this wondrous beast was. The one who bumped his side decided that the elephant is "very like a wall", while the one who felt of his tusk concluded that it was "very like a spear". A third thought the elephant resembled a snake, because he grabbed its squirming trunk. A fourth, who clutched it round the leg, thought it "very like a tree". Another felt its ear, which reminded him of a fan. The sixth blind man, grabbing its tail, concluded that the elephant was "very like a rope".

And so the men of Indostan
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong.
Though each was partly in the right.
They all were in the wrong.

Recently I was with a group of purchasing agents representing a mixed group of industries, and heard three of them argue that he was by far the most efficient of the group. The first contended that he bought every article that his company used at the very lowest price. The second's claim to distinction was his ability to secure any given item in the shortest possible time. The third raved about the superior quality of the goods that he procured.

Here we have the three familiar factors of price, service, and quality, each set apart and emphasized. No one can argue that these are not important points, but they are each only a part of the purchasing function, not the complete purchasing picture.

Purchasing, in my opinion, has no simple, single "most important" feature. Rather, it is made up of a combination of factors determined by the nature of the particular business and of the need. I have always felt that sales is the life blood of any thriving industry, and successful selling in a competitive market such as we are experiencing today depends largely upon sound purchasing practices. If the purchasing agent can secure material at the lowest market price and can also maintain a high quality of material for his company's needs, and have it when the company's production demands it—then he has fulfilled his duty. For it necessarily follows that the finished goods of that company will be more readily sold because of their high quality and relatively low cost. But if he falls down on any one of the three factors, he places sales at a disadvantage.

The purchasing department is, by its very nature, a service department, catering to the particular needs of the various departments. Because of these various demands upon the purchasing department, no one function can be called the "most" important. In a truly efficient purchasing activity, *each request should be considered that department's most important phase.*

The next time you read an article or hear a discussion on "the most important phase of purchasing", try to keep in mind that no matter how much you may specialize in a particular aspect of purchasing, it is only a part of a bigger, more complete picture. Like our six blind friends from Indostan and their wondrous elephant, it's very easy to be a little right and a great deal wrong.

Recovering Product Dust

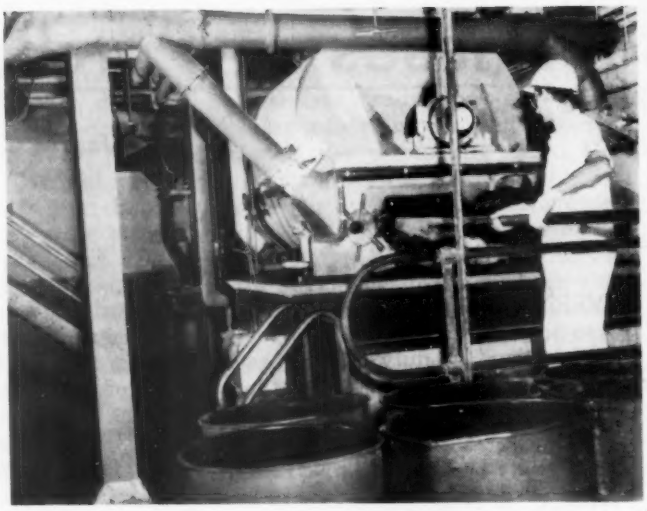
By Eugene F. Anderson

UNLOADING product dryers in plants manufacturing any of the chemical, food, or pharmaceutical products is one of the operations most likely to produce dust and create personnel and housekeeping problems. Lederle Laboratories Division, American Cyanamid Company, Pearl River, New York, experienced this problem, but found that the dust problem could be solved and at the same time, the cost of materials for manufacturing could be reduced through use of recovered product.

In their auxiliary drying room, which handles animal feed grade Aureomycin chlortetracycline and vitamin by-products, three rotary vacuum dryers are used, each with a capacity of 2000 pounds of material per batch, and each drying an average of 2 batches per 2-shift day. Although there was no dust problem during the loading of the dryers, since they receive the products in the form of a moist filter cake, an undesirable dust condition resulted at the end of the drying cycle, when the machines are unloaded by hand.

The operator unloads each dryer by drawing the product out of it with a large wooden hoe. The material then falls into a hopper below the mouth of the drying oven. Emptying a dryer takes about half an hour. During this process, fine particles of dust would billow up and disperse into the working areas of the department. Much valuable product was lost in the form of dust.

It was realized that an efficient dust control system was necessary for this operation, so local exhaust ventilation — incorporating hoods, ductwork, and a collector—was investigated. Hooding for each dryer was designed, with each hood and duct carefully sized to pass air at a velocity sufficient to overcome that of the air currents tending to disperse the dust particles into the room.



Operator at Lederle plant removes Aureomycin from rotary dryer. Any dust from this operation is efficiently corralled in the ventilating hood over the mouth of the drying oven, and is carried off to the collector before it can permeate the atmosphere in working areas. Collected product is protected from contamination and put back into the batch.

Since much of the dusty material is of a very small particle size, a collector utilizing cloth filtration was specified because of its high efficiency. A Dustube collector, (American Wheelabrator & Equipment Corp.) was selected to ventilate the three dryers. It has hundreds of square feet of filtering cloth in the form of hundreds of individual cotton sateen tubes. Cotton cloth was selected as the filtering medium after a thorough study of air temperature, the corrosive and chemical properties of the dust, its abrasive qualities, and all other factors determining the kind of cloth needed for satisfactory operation. Since cloth filtration is capable of of over 99% efficiency, even the smallest particles are trapped, and the working areas around the plant are clean and dust-free.

At pre-determined intervals, these tubes are mechanically shaken, and the collected dust in them falls down into hoppers, from where it is later taken and returned to appropriate product batches. The tubes are always shaken clean before the type of material run through the dryers is changed, so that there will be no mixing of products. This reclamation policy affords a savings through reuse of material that was formerly lost to the atmosphere in the form of dust, and helps to amortize the cost of the collector.

Besides the saving in materials costs, the improved appearance of the plant and the working conditions in it have been important.

The Pulse of Business

JANUARY, 1955

PURCHASING'S Summary of economic conditions

How does business look for 1955? A good start for any analysis is to take a look at what happened last year.

The outlook was definitely gloomy as '54 began. But, it brightened as the year progressed. At the start of '54, employment and output had declined steadily from the highs reached in the summer of 1953. There was serious talk (even in some business circles) that the government should immediately start a vast public works program and other schemes to prevent the downturn from becoming a major depression.

Instead, government intervention was limited to indirect measures. Business borrowing was encouraged by an easy money policy. Liberal mortgage financing stimulated home construction. Government contract awards were used as a catalyst to stimulate production in depressed industries (without any net increase in government spending). Metal markets were supported by the stockpiling program. Tax cuts increased the purchasing power of both corporations and individuals.

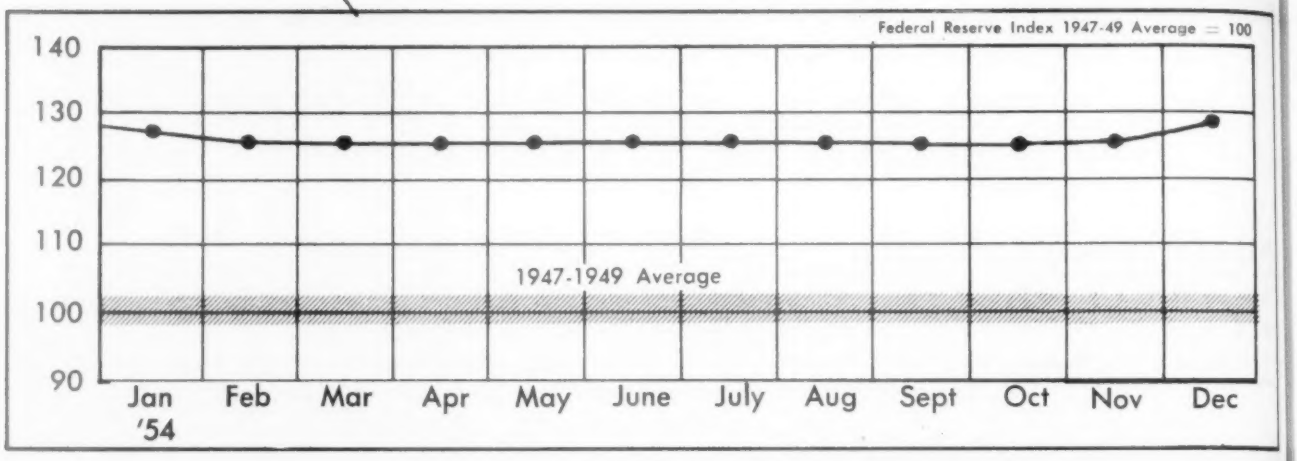
However, the economy proved far more resilient than had been predicted by many. Personal income remained steady - near $286 billion. Business activity levelled off at a point which - though under 1953 - made 1954 one of the most prosperous in our history. In January, 1954, the Industrial Production Index was 125; in early December, it was 129. During this same period, manufacturers cut inventories by more than $3 billion. All this liquidation was effected without the drastic price declines characteristic of severe business recessions. In fact, wholesale prices are within 1% of their year ago levels.

The outlook for the New Year appears much brighter than it was a year ago. Inventory liquidation does not appear to loom as a factor in curtailing factory output. In fact, the latest statistics indicate a slight increase in durable goods stocks.

The roaring bull market in stocks reflects rampant optimism of investors and speculators. Most professional forecasters are also optimistic. Economists for the Prudential Insurance Co. predict that total

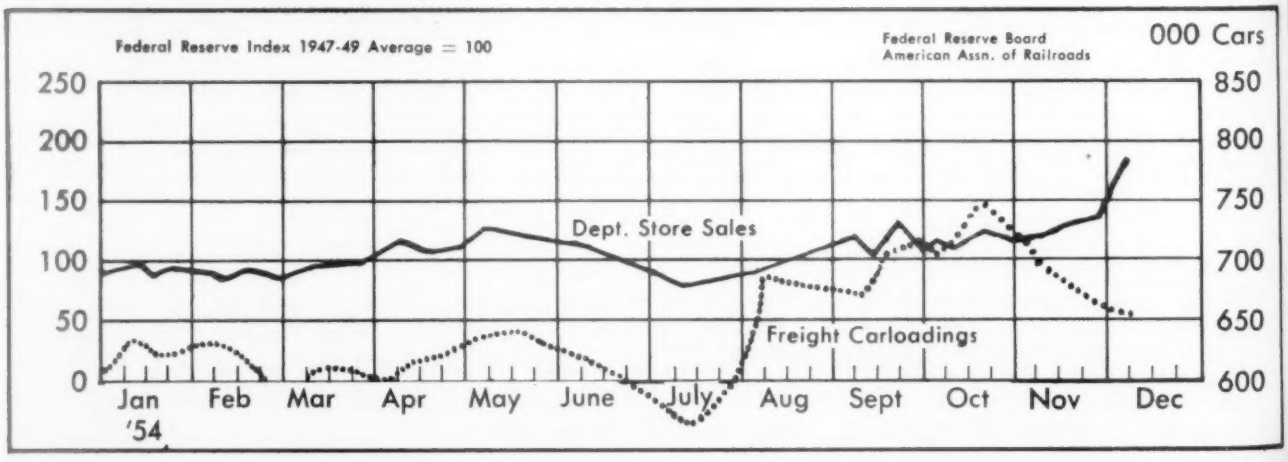
- continued on page 108 -

PRODUCTION



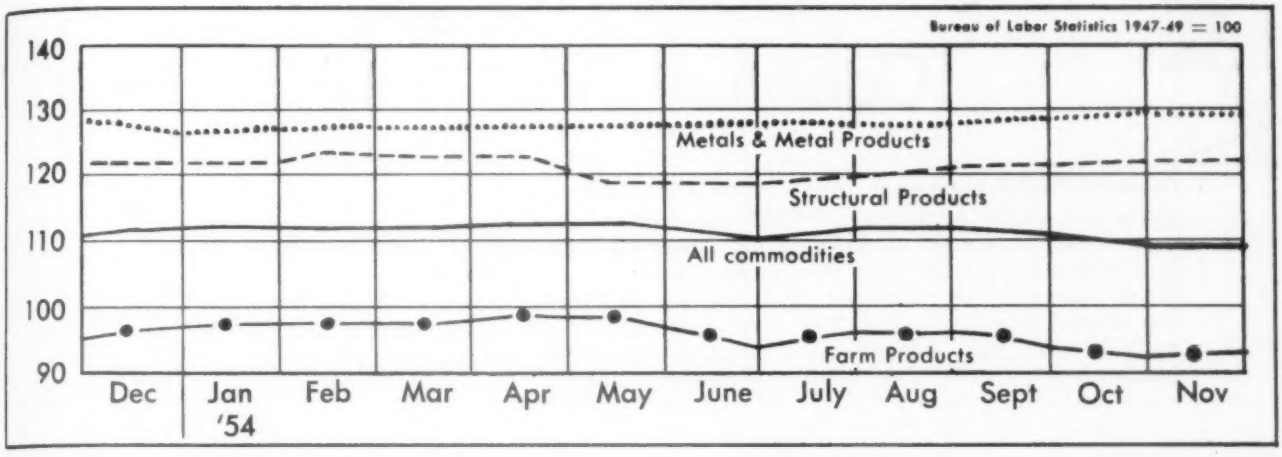
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Industrial Production Index	1947-49=100	129	126	129	+ 2.3	0
Steel Production (Weekly)	000 net tons	1,944	1,842	1,955	+ 5.5	— 0.6
Electric Power Production (Weekly)	mil KWH	9,612	9,357	8,582	+ 2.7	+12.0
Bituminous Coal Production (Weekly)	000 net tons	8,970	8,435	8,210	+ 6.3	+ 9.2
Auto, Truck & Bus Output (Weekly)	units	171,588	117,922	105,758	+45.5	+62.2
Petroleum Output (Daily Average)	000 bbls.	6,286	6,191	6,179	+ 1.5	+ 1.7

TRADE



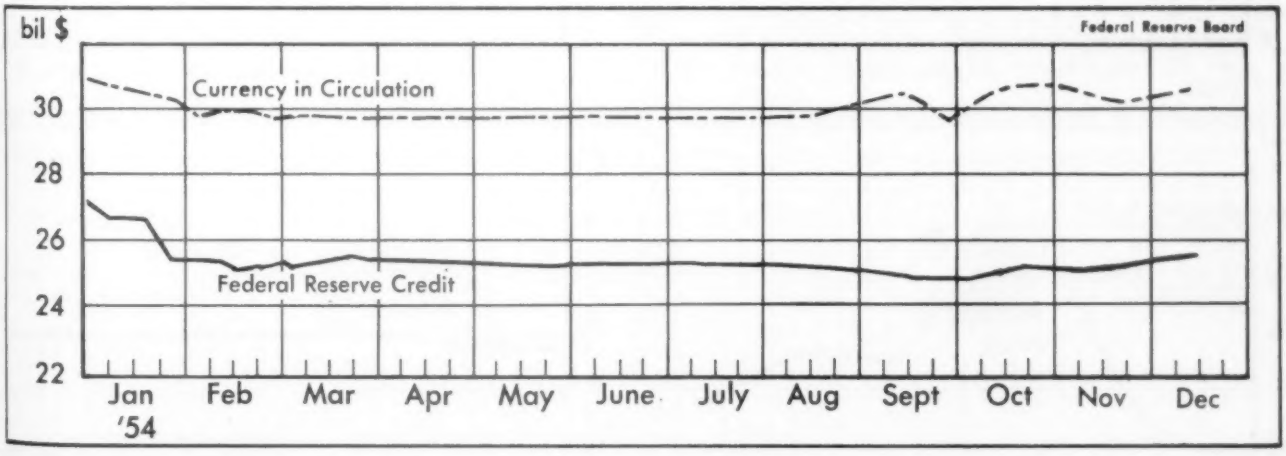
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Dept. Stores Sales Index (Fed. Res.)	1947-49=100	191	117	190	+63.2	+ 0.5
Commercial Failures (Dun & Bradstreet)	no.	221	204	202	+ 8.3	+ 9.4
Freight Carloadings	cars	661,797	695,097	662,035	— 4.8	— 0.1
Miscellaneous Carloadings	cars	348,155	347,397	353,931	+ 0.2	— 1.6

PRICES



	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
All Commodities (BLS)	1947-49=100	109.8	109.7	109.8	+ 0.1	0
Farm Products	1947-49=100	93.1	93.1	93.6	0	— 0.6
Metals & Metal Products	1947-49=100	129.7	129.7	127.9	+ 0.1	+ 1.6
Structural Products	1947-49=100	121.8	121.9	120.8	— 0.1	+ 0.8
Steel Billets (Pittsburgh)	net ton	$64.00	$64.00	$62.00	0	+ 3.2
Steel Scrap, heavy melting, Pitts	net ton	33.00	33.00	33.50	— 1.4	— 1.4
Copper, electrolytic	lb.	.30	.30	.30	0	0
Rubber (rib-smoked sheets)	lb.	.28⅝	.28½	.20⅜	+ 0.4	+40.5

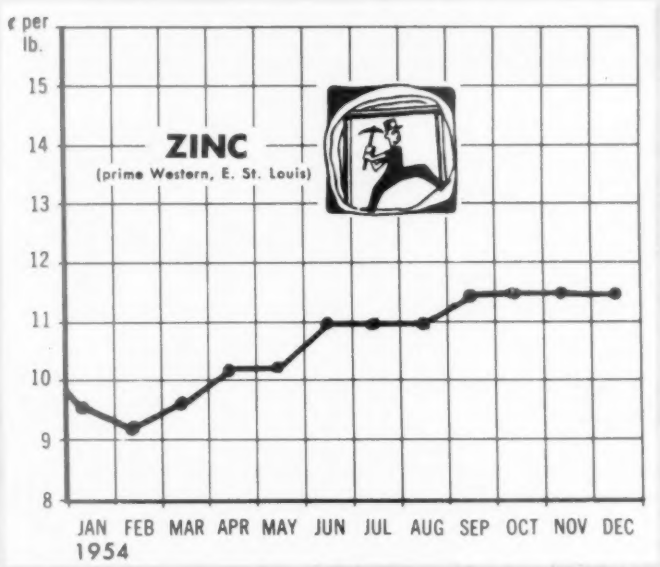
FINANCE

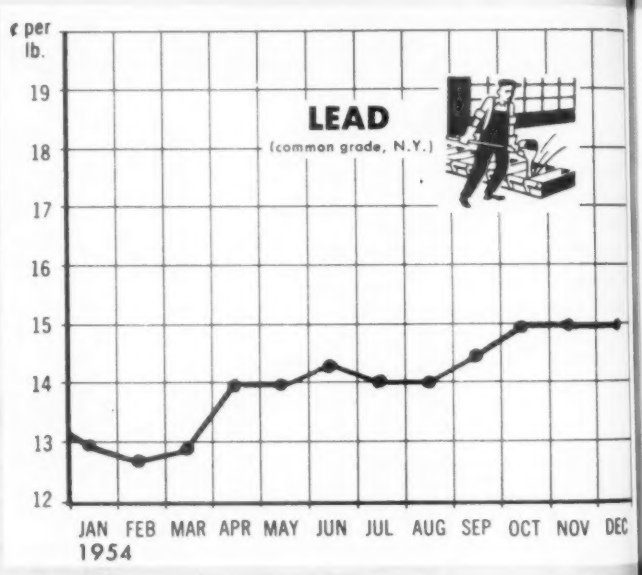


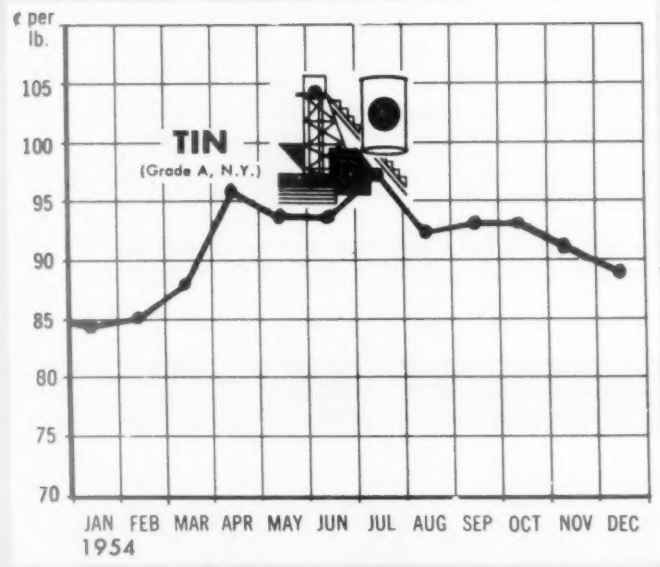
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Stock Prices (Standard & Poor's)	1926=100	275.5	265.8	197.7	+ 3.6	+39.7
Bank Clearings (New York)	mil $	9,590	10,639	9,048	— 9.9	+ 5.9
Federal Reserve Credit	mil $	25,858	25,495	26,681	+ 1.4	— 3.1
Currency in Circulation	mil $	30,697	30,138	30,904	+ 1.9	— 0.7

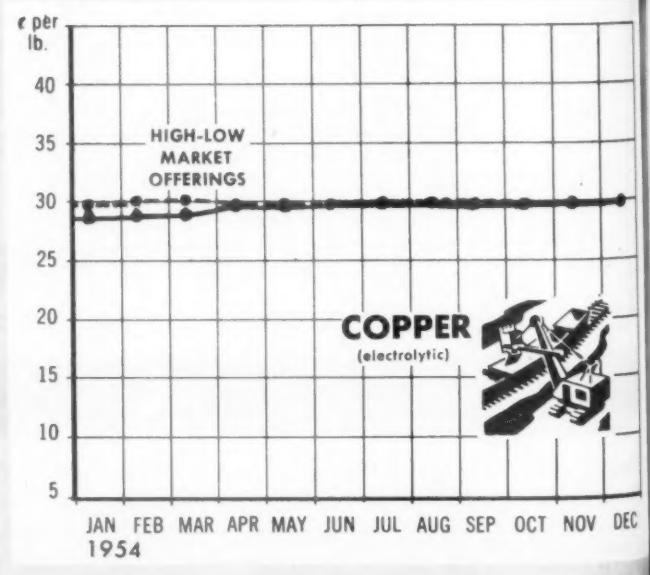
Commodity Prices Continue Firm

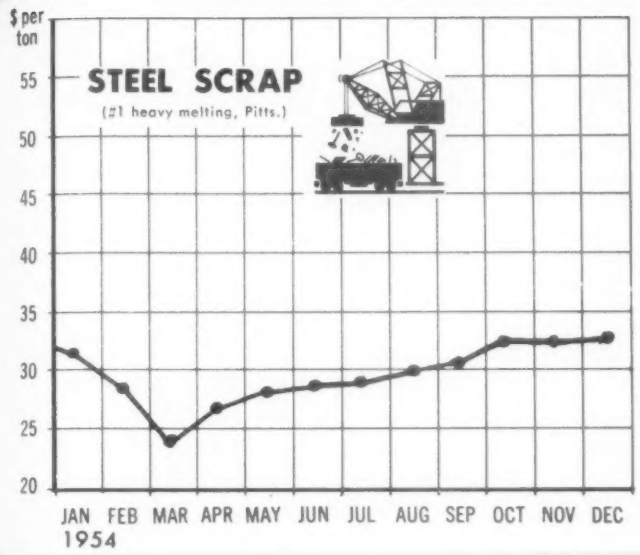
Overall averages of commodity prices continue to remain remarkably steady. Individual increases are offset by decreases. High level of business activity predicted during the next six months plus government supports will tend to keep prices of most commodities near current levels. Some fabricators cut steel inventories too far back; as a result, there is now a scramble for cold rolled sheets. There is no incentive, however, to carry more than normal inventories of steel or most other commodities. Copper, very tight as a result of strikes, should become more plentiful in the future. Petroleum products may show some price strength but supplies are more than ample.

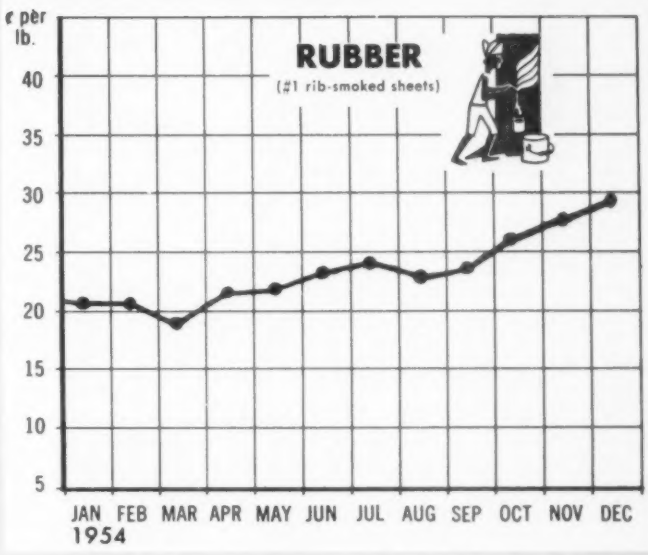


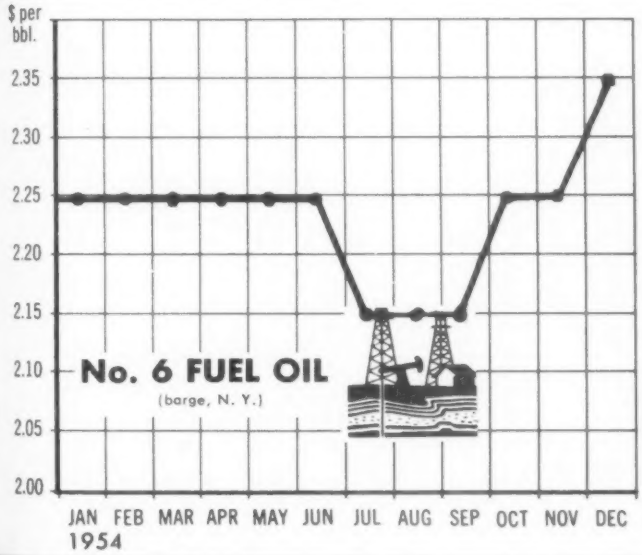


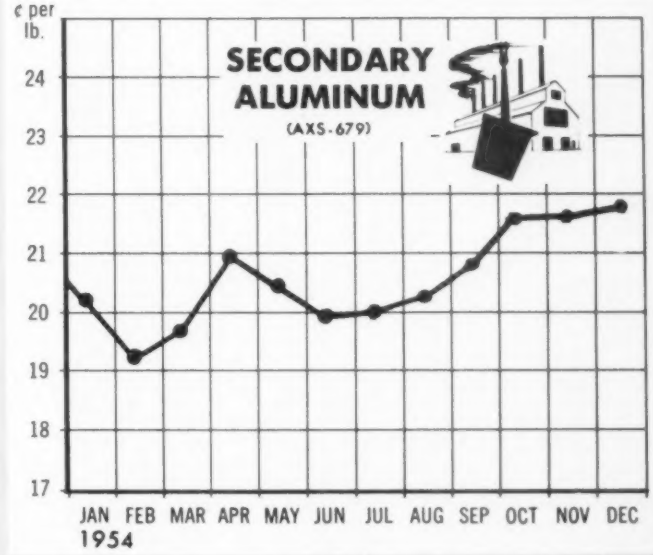


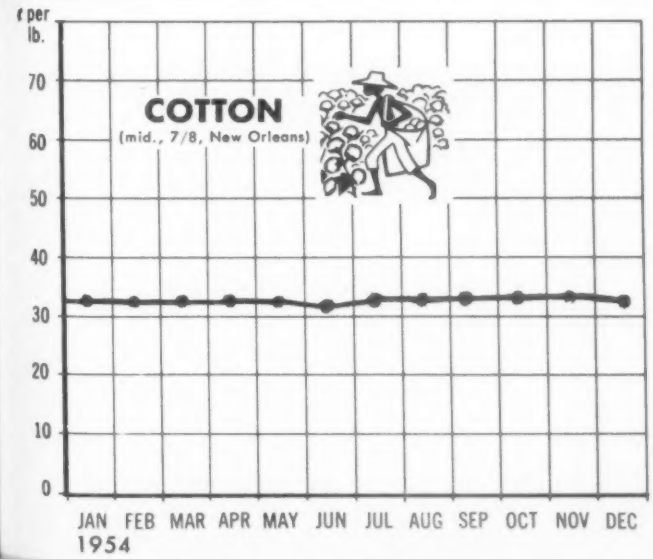


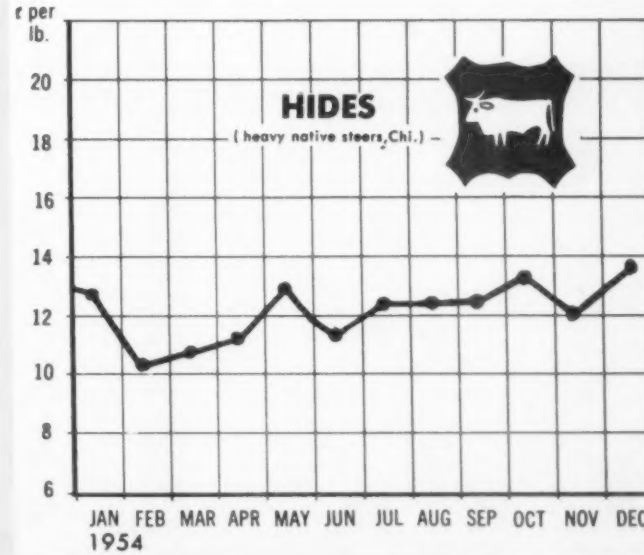

$ per ton
STEEL SCRAP
(#1 heavy melting, Pitts.)
55
50
45
40
35
30
25
20
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1954


¢ per lb.
RUBBER
(#1 rib-smoked sheets)
40
35
30
25
20
15
10
5
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1954


$ per bbl.
No. 6 FUEL OIL
(barge, N. Y.)
2.35
2.30
2.25
2.20
2.15
2.10
2.05
2.00
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1954


¢ per lb.
SECONDARY ALUMINUM
(AXS-679)
24
23
22
21
20
19
18
17
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1954

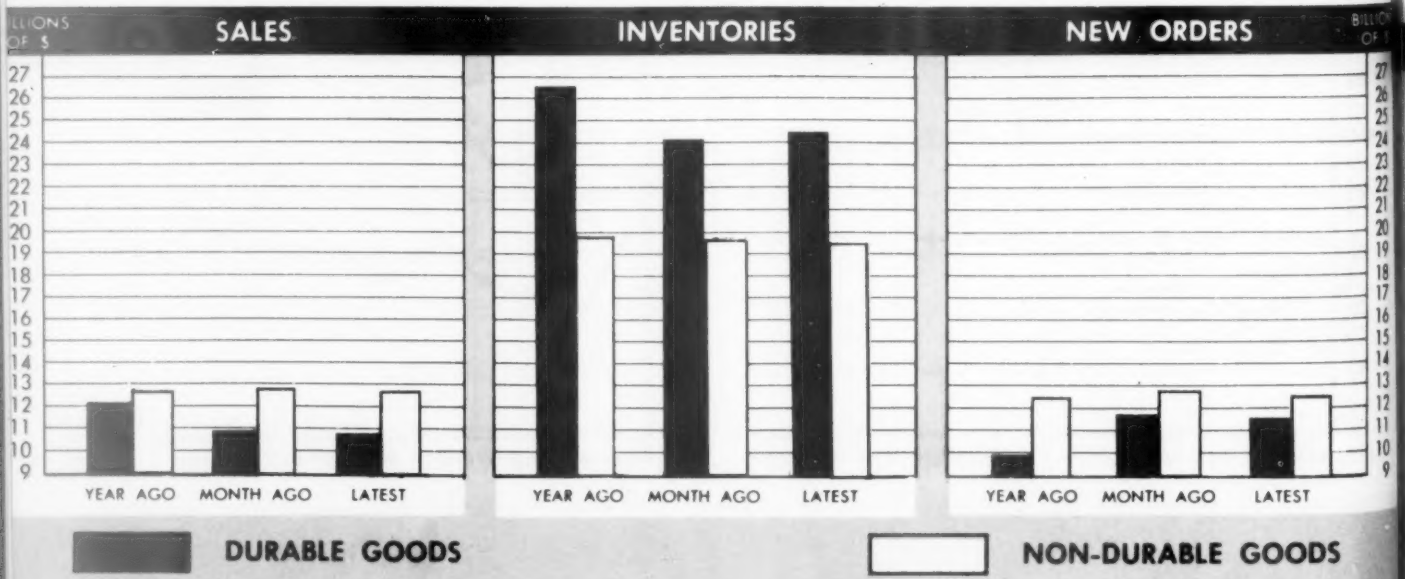

¢ per lb.
COTTON
(mid., 7/8, New Orleans)
70
60
50
40
30
20
10
0
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1954


¢ per lb.
HIDES
(heavy native steers, Chi.)
20
18
16
14
12
10
8
6
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1954

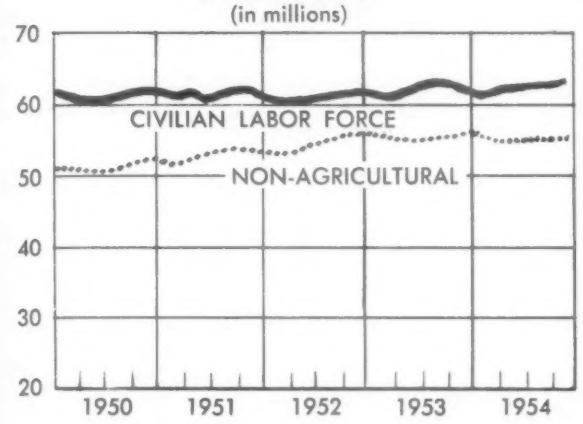
Sales, Inventories and New Orders

	1953	1954				
	Oct.	June	July	Aug. (r)	Sept. (p)	Oct. (p)
Value of Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)						
All Manufacturing industries	24,990	24,260	24,055	23,482	23,677	23-377
Durable goods industries	12,376	11,395	11,287	10,952	10,974	10,789
Primary metals	1,985	1,567	1,528	1,468	1,519	
Fabricated metals	1,139	1,180	1,184	1,144	1,122	
Electrical machinery	1,391	1,316	1,318	1,276	1,336	
Machinery (except electrical)	2,039	1,901	1,920	1,838	1,868	
Motor vehicles & equipment	2,095	1,974	1,800	1,774	1,563	
Transportation equipment (exc. motor vehicles)	1,140	914	1,061	949	963	
Furniture and fixtures	364	334	300	311	317	
Lumber products (exc. furniture)	715	678	684	688	726	
Stone, clay and glass products	575	599	608	597	612	
Professional, scientific instruments	353	364	354	331	362	
Other industries, incl. ordnance	580	568	530	576	586	
Nondurable goods industries	12,614	12,865	12,768	12,530	12,703	12,588
Food and kindred products	3,890	3,844	3,748	3,785	3,816	
Beverages	666	649	682	582	618	
Tobacco products	304	299	301	306	309	
Textile-mill products	1,038	1,064	1,040	1,023	1,034	
Apparel	900	818	938	909	872	
Leather and products	243	355	377	349	340	
Paper and allied products	738	766	753	742	734	
Printing and publishing	745	767	746	751	787	
Chemicals and allied products	1,643	1,724	1,675	1,686	1,759	
Petroleum and coal products	2,062	2,202	2,134	2,060	2,097	
Rubber products	385	377	374	337	n.a.	
Book value of Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)						
All Manufacturing industries	47,044	44,535	44,194	43,929	43,637	43,773
Durable goods industries	26,987	24,689	24,383	24,232	24,105	24,372
Primary metals	3,507	3,071	3,107	3,082	3,066	
Fabricated metals	3,038	2,831	2,773	2,759	2,735	
Electrical Machinery	3,484	3,062	3,049	3,041	3,018	
Machinery (exc. electrical)	5,665	5,148	5,097	5,101	5,055	
Motor vehicles & equipment	3,445	3,021	2,899	2,790	2,762	
Transportation equipment (exc. motor vehicles)	2,702	2,691	2,622	2,695	2,712	
Furniture and fixtures	679	650	664	656	671	
Lumber products (exc. furniture)	1,121	981	958	944	948	
Stone, clay and glass products	901	895	883	866	870	
Professional, scientific instruments	881	874	862	850	835	
Other industries, incl. ordnance	1,564	1,465	1,469	1,448	1,433	
Nondurable goods industries	20,057	19,846	19,811	19,697	19,532	19,401
Food and kindred products	3,468	3,492	3,468	3,437	3,406	
Beverages	1,142	1,209	1,222	1,198	1,160	
Tobacco products	1,811	1,887	1,930	1,912	1,861	
Textile-mill products	2,614	2,422	2,376	2,383	2,368	
Apparel	1,862	1,762	1,760	1,766	1,740	
Leather and products	577	595	580	567	561	
Paper and allied products	1,044	1,046	1,021	1,007	1,020	
Printing and publishing	768	748	734	735	759	
Chemicals and allied products	3,140	3,085	3,146	3,147	3,101	
Petroleum and coal products	2,750	2,771	2,790	2,784	2,795	
Rubber products	881	829	784	761	n.a.	
Manufacturers' New Orders (Adjusted)						
All Manufacturing industries	22,154	22,876	22,551	22,560	24,183	24,000
Durable goods industries	9,677	9,985	9,700	9,978	11,341	11,500
Nondurable goods industries	12,477	12,891	12,851	12,582	12,842	12,500

p—preliminary r—revised n.a.—not available

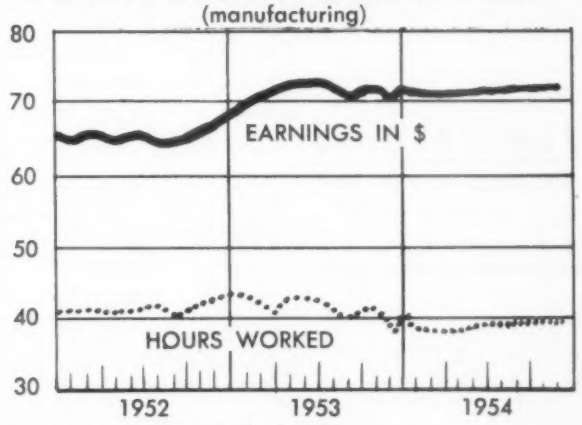


EMPLOYMENT
(in millions)



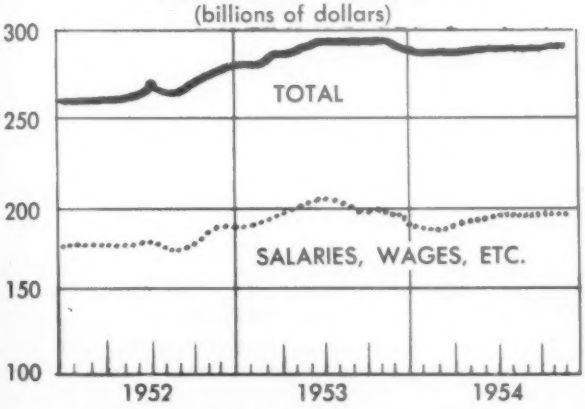
Source: Bureau of the Census

AVERAGE WEEKLY EARNINGS, HOURS
(manufacturing)



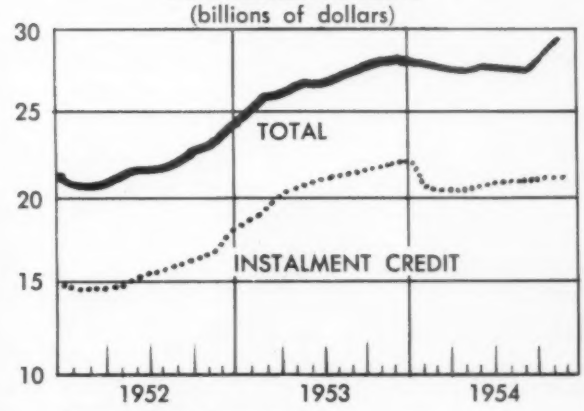
Source: Department of Labor

PERSONAL INCOME
(billions of dollars)



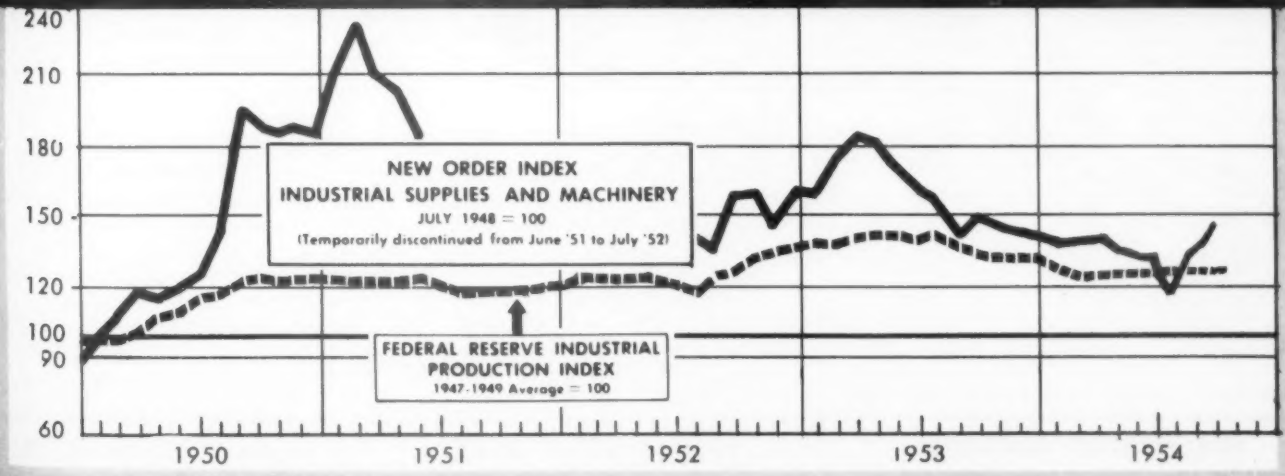
Source: Department of Commerce

CONSUMER CREDIT
(billions of dollars)



Source: Federal Reserve Board

NEW ORDER INDEX INDUSTRIAL SUPPLIES AND MACHINERY



Source: American Supply & Machinery Manufacturers' Association

- continued from page 101 -

spending for goods and services will reach $370 billion - $5 billion more than the 1953 record high. They predict spending of an additional $9 billion by consumers with government expenditures remaining unchanged. Continued price stability is forecast although they can visualize the possibility that there may be "some tendency" for prices to "inch upward" later in the year.

PURCHASING'S Summary of economic conditions

Construction will continue to be the major bulwark of prosperity. During 1955, it is expected to amount to nearly one-sixth of our gross national product. According to Johns-Manville Vice President, H. R. Berlin, expenditures for construction and modernization will total $60 billion. The previous record was about $54 billion in 1954. Home building is expected to reach a record 1,250,000 units compared with 1,200,000 starts last year.

Hardest hit by the 1953-4 inventory adjustment were the consumer durable goods industries. Until 1955 models were introduced, auto output was lagging badly while dealers were getting rid of excess stocks. Inventories of cars are down to normal levels now and dealers report near record sales.

Indicative of current industry optimism is General Motors' President Harlow Curtice's prediction that 1955 sales will reach 5,800,000 cars. Mr. Curtice predicted 1954 production of 5,300,000 cars and was called over optimistic. It appears now that actual production will be closer to 5½ million cars. The accuracy of Mr. Curtice's prediction will be tested this summer after salesmen have picked up all the easy sales prospects for '55 models.

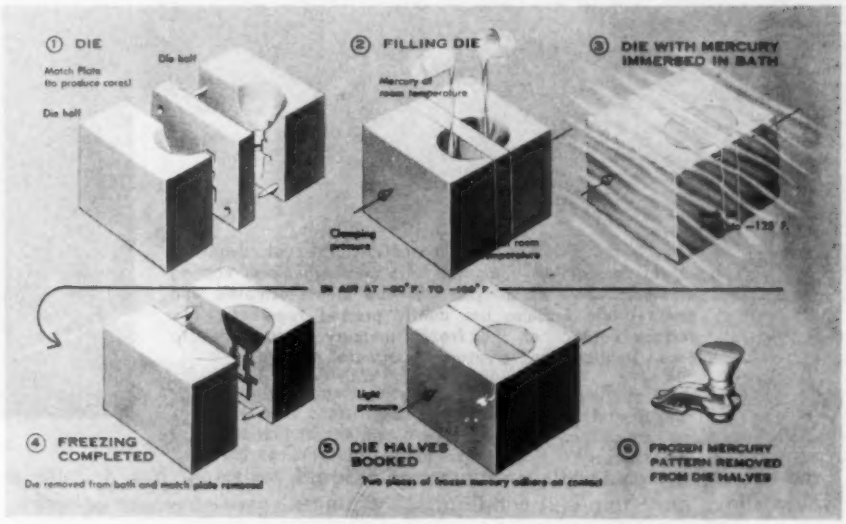
Brighter still is the outlook for other sectors of the consumer durable goods industry. Record new housing will help generate future demand for the host of new appliances and tools that go with a new home (and adversely effect purchasing power available to buy a new car). In some cases, factories are hard put just to keep up with current sales.

Non-durable goods industries are inherently more stable. However, some of them were in the doldrums long before the decline in durable goods which began in mid '53. The shoe and textile industries, in particular, have experienced a long siege of stagnation. Stocks at retail and wholesale levels have been cut to the point where ordering is all but mandatory. These industries should expect a more than seasonal pickup which should last at least until mid-year.

Precision Casting by the Frozen Mercury Process

An economical technique for producing intricate shapes to close tolerances from conventional or hard-to-cast metals

By Irvin R. Kramer,
Vice President,
Mercast Corporation, New York

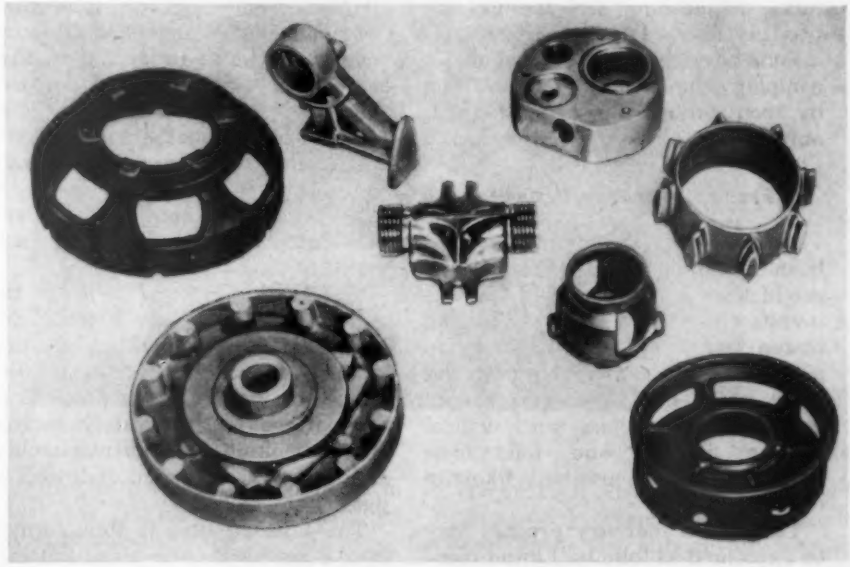

① DIE
Match Plate (to produce cores)
Die half
Die half
② FILLING DIE
Mercury at room temperature
Clamping pressure
③ DIE WITH MERCURY IMMERSED IN BATH
IN AIR AT -60° F. TO -100° F.
④ FREEZING COMPLETED
Die removed from both and match plate removed
⑤ DIE HALVES BOOKED
Light pressure
⑥ FROZEN MERCURY PATTERN REMOVED FROM DIE HALVES

Sequence of operations necessary to form a frozen mercury pattern includes the pouring of mercury into a metal die at room temperature, freezing, then "booking". Result: a complete one-piece frozen mercury pattern.

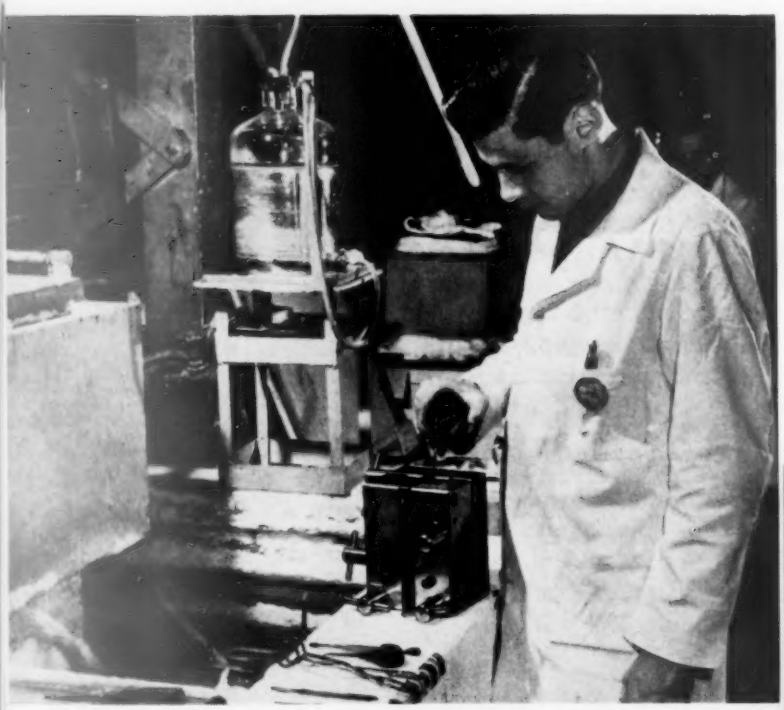
BECAUSE of the increasing demand for parts in a wide variety of metals and possessing intricate and complex shapes, the use of the frozen mercury process in producing parts to exacting specifications and at an economical, overall cost, has assumed a vital role in today's production processes.

In such fields as petroleum and heavy chemical processing, power generation and transportation, metalworking and allied industries, food processing, electrical and electronics, the trend has been sharply pinpointed toward increasingly rigorous demands on equipment for more rapid and efficient operation. The higher temperatures and pressures, as well as the reduction in size of components, has resulted in higher stresses; the introduction of new industries, such as radar, has increased the demand for parts of more complicated shape and more accurate dimensional tolerances.

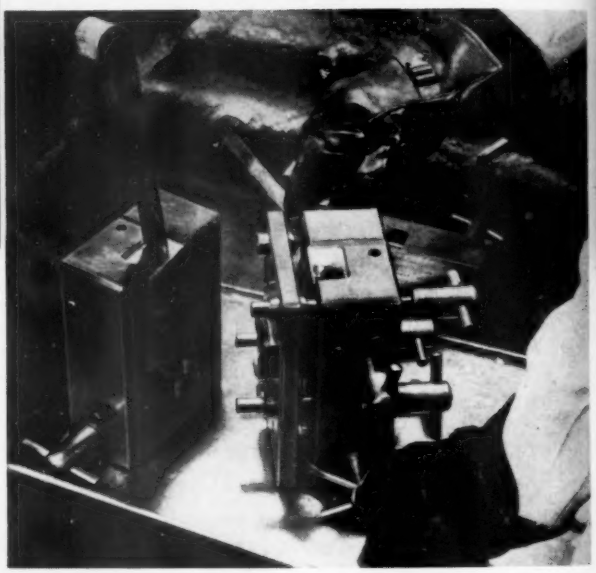
To design systems and equipment that withstand these new conditions, new materials and complex shapes have been required. The greater use of the high nickel and chromium alloys, the refractory alloys such as



Typical parts formed by the frozen mercury process. Complex shapes, hollow sections, thin walls, and large flat areas can be produced to close dimensional tolerances in a variety of metals and alloys that cannot be handled by conventional forming techniques.



The process starts with pouring mercury into a closed die. Mercury has favorable "wetting characteristics, which insure complete filling of complicated shapes. The die is then immersed in a freezing mixture (-100° F) until the mercury is frozen.



The "booking" operation is the basis of the real advantage of this process as compared with other precision casting methods. The match plate of the die is removed and the two die sections are lightly pressed together. The surface contact of the frozen mercury is sufficient to cause welding, thus creating an integral pattern.

the cobalt-base materials, and many new alloys have imposed conditions that could not be met successfully with conventional production and machining techniques. For conventional materials such as aluminum, magnesium, and the brasses, bronzes, and steels, these new conditions have resulted in demands for complex shapes which can be met by conventional casting methods only at a prohibitively high cost.

Frozen Mercury Process

A solution to these problems has been found in a new phase of the production of parts employing the investment casting process. Utilizing frozen mercury instead of wax and plastic to form expendable patterns, more and more complex shapes have been developed with critical surface finishes and tolerances; larger and larger parts have likewise resulted.

The frozen mercury process may be explained as follows. Liquid mercury is poured into a steel die which is then immersed in a freezing bath at or below —100° F. Because it is a liquid, mercury has definite advantages over wax or plastic in filling all areas within the die. When the liquid mercury reaches a temperature of —40° F., it freezes, forming the expendable pattern. The die is opened and the solid form removed. Where exceptionally complex parts are to be produced, they may be formed as separate frozen mercury patterns, then joined by placing them together under only the slightest pressure. "Booking", the unique ability of mercury to fuse with itself, enables large and very intricate shapes to be produced.

The steel dies used to form the mercury patterns are always designed with the booking operation in mind, and as such, constitute dies as well as fixtures. The portions of the pattern are accurately located during booking, by proper assembly, and always with the aid of dowels or jigs.

The finished unit is thus formed into a seamless, one-piece pattern, utilizing as many individual sections as necessary to form the desired part.

The finished pattern is then dipped into baths of ceramic slurry which uses a non-aqueous solvent. Once the resultant hardened soil has attained its thickness of approximately $\frac{1}{8}$-inch, the mercury is allowed to melt out at room temperature.

To strengthen the shell mold, it is fired at a temperature of about 1850° F. for two hours. The interior of the mold thus has the desired shape and dimensions with respect to the die.

Molten metal as required is then poured into the ceramic molds, and after sufficient cooling, the shell is broken away, leaving the finished part. Sometimes, sand blasting or other standard means are utilized to clean the part.

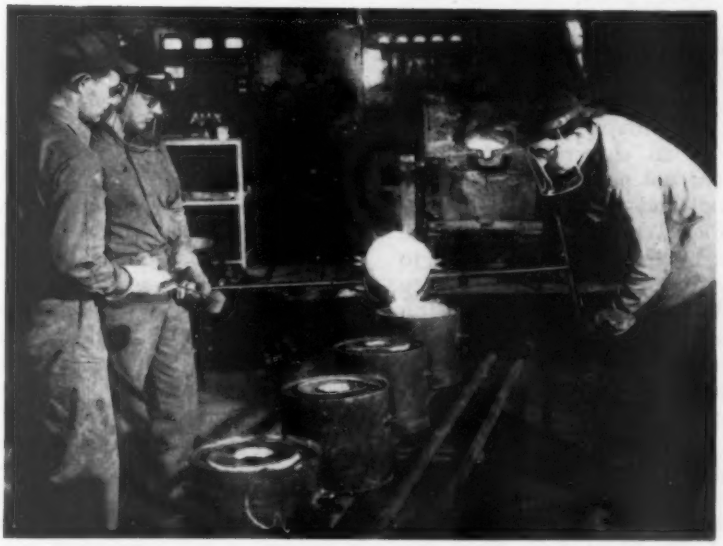
Important Advantages

Unique unto itself, the frozen mercury process allows the production of relatively large parts of very considerable complexities. At present, steel castings have been produced having a diameter of 42 inches and weighing 300 lbs. This is by no means the practical limit of the

The mercury pattern is dipped into a ceramic slurry to build up a thin shell mold around the pattern. This is done repeatedly until the required thickness is obtained—normally about 1/16 to 1/8 inch. The thin ceramic mold is unique in the frozen mercury process.

After the mercury pattern is melted out, the ceramic mold contains a cavity of precise dimensions and excellent surface. It is fired for two hours at 1850° F to obtain a hard, strong structure.

Metal is poured into the ceramic mold. The thin, uniformly permeable ceramic shell molds permits the use of pressure, centrifugal, or suction casting techniques. It is possible to exercise a wide choice of pouring and preheating temperatures; grain size and other metallurgical characteristics of the metal casting can be closely controlled.



process which through its facilities, is constantly being expanded to turn out larger and heavier parts.

The true economy of the frozen mercury process is often found in a comparison of the cost of parts so produced with other methods of casting or forming plus the costs of the additional machining operations required to obtain the required tolerances and surface finishes. Of basic importance is the ability of the frozen mercury method to produce parts with such tolerances and finishes to require the minimum, if any, additional processing, markedly reducing overall costs.

In addition, certain key metals can be cast with the frozen mercury process which cannot be machined under any circumstances. Then too, the thin walls and intricate shapes of many castings often pose insurmountable problems in subsequent machining to make such operations unpractical.

Of equal importance are those costs saved through the elimination of other subsequent fabrication operations—riveting, welding, bolting, brazing, etc.—of individual parts to form the completed component. As already indicated, the booking property of mercury enables this process to produce finished assemblies, thus eliminating later, costly joining operations.

Accordingly, by appropriate redesign, many components now purchased from the outside, or fabricated internally as separate units, can be obtained as a single integral casting, with the accompanying savings in fabrication, handling, etc.

Non-Signers' Rights Under "Fair Trade" Agreements

So-called "Fair Trade" resale price fixing laws have been passed in forty-five states . . . The constitutionality of this legislation has been challenged in sixteen of these jurisdictions, with conflicting decisions . . . The legal issues are whether the laws are actually related to the public welfare and whether the results are consistent with the basic intent.

By Albert Woodruff Gray

SUIT for an injunction against a retailer selling goods below a fair trade price, who had not signed the fair trade agreement, came on appeal before the Florida Supreme Court. This retailer contended that the provisions of this statute by which retailers were bound by an agreement to which they were not parties, were unconstitutional and void.

The Fair Trade Law of that state is in part, "No contract relating to the sale or resale of a commodity which bears the trade-mark of a producer shall be deemed in violation of a law of the state of Florida by reason of any provision that the buyer will not resell such commodity at less than the minimum price stipulated; that the buyer will require of any dealer to whom he may resell an agreement that he will not resell at less than the minimum price and that no minimum resale price shall be so established by anyone other than the trade-mark owner."

Act Held Unconstitutional

That court, holding the law unconstitutional, said of such non-signer provisions that are common to the fair trade laws throughout the country:

"The right to own, hold and enjoy property is nearly absolute. The statute cannot be the means of leveling unequal fortunes, neither can it favor one segment of the people at the expense of another. These principles are fundamental. If the stronger and more influential may impose their wills upon minorities where the general welfare does not require such legislation, then the weaker and less fortunate will soon be vanquished. Constitutional law never sanctioned the granting of sovereign power to one group of citizens to be exercised over another unless the general welfare is served.

"The effect of this act is to grant by indirection sovereign power to one person to be exercised against another. The power to fix the price is vested in an interested person who is not an official. There is no review of the act. He is required to consult with no one and in no sense is required to take into consideration the cost of the article or the reasonableness thereof."

Then in conclusion the court added, "The act is arbitrary and unreasonable and violates the right to own and enjoy property; one economic group may not have the sovereign power of the state extended to it and use it to the detriment of other citizens. In that case the legislation serves a private rather than a public service."

Contract or Club?

Shortly after this condemnation of the autocracy granted trade-mark owners by these laws an appeal involving similar non-signer provisions of the Louisiana Fair Trade Law came before the Federal Supreme Court.

That statute permitted a contract fixing the resale price of a commodity to stipulate that the buyer would not resell except at a price set by the seller and, further, that when such a price fixing contract had been made with any retailer in the state, a retailer selling such goods at less than this stipulated price became liable in damages to a trade-mark owner even though the retailer was not a party to this price fixing contract.

The Miller-Tydings Act passed by Congress in 1937 exempted these price fixing contracts from outlawry by the Sherman Anti-Trust

Act as contracts in restraint of trade but in so doing did not include these non-signer provisions within the pale of that exemption.

The Supreme Court referring to this omission, said: "We find the following statement made on the floor by Senator Tydings, 'What does the amendment do? It permits a man who manufactures an article to state the minimum resale price of the article in a contract with a man who buys it for ultimate resale to the public.' Not once did Senator Tydings refer to the non-signer provisions of state law. It is to the sponsors that we look when the meaning of the statutory words is in doubt. And when we read what the sponsors wrote and said about the amendment we cannot find that the distributors were to have the right to use not only a contract to fix retail prices but a club as well. The words they used—'contracts or agreements'—suggest just the opposite."

The McGuire Act

The year following this decision by the Supreme Court, Congress passed the McGuire Act, extending the immunity from the anti-trust laws not only to the parties to these fair trade laws but to non-signers as well, thus exempting from the anti-trust acts the state laws making it unfair competition. It stated:

"Willingly and knowingly advertising, offering for sale or selling any commodity at less than the price or prices prescribed in such contracts or agreements, whether the person so advertising, offering for sale or selling, is or is not a party to such a contract or agreement."

Less than a year after the McGuire Act was passed by Congress, three appeals came before the New York State Court of Appeals involving violations of fair trade agreements by non-signers, in which it was contended that these non-signer provisions were an unlawful delegation of legislative power to individuals, a deprivation of property without due process of law, and a denial of the equal protection guaranteed by both the state and Federal Constitution.

That court sustaining the constitutionality of these non-signer provisions said of the Supreme Court decision holding such provisions void before the enactment of the McGuire Act;

"It is true that the Supreme Court held that by the Miller-Tydings amendment Congress did not demonstrate and intend to permit fair trade 'compulsion' against non-signers of those agreements. However the court did not in its opinion indicate that such 'compulsion' if expressly authorized by Congress, would transgress any constitutional prohibition; indeed, the decision contains clear implications to the contrary."

High Courts Disagree

At the time this decision was rendered by the New York Court an identical controversy was also before the Supreme Court of Delaware for decision and a few days later that court said of the con-

(*Please turn to page 272*)

The Non-Signer Clause in "Fair Trade" Laws

". . . arbitrary and unreasonable . . . serves a private rather than a public service."

—Florida

". . . the right to use not only a contract to fix retail prices, but a club as well."

—U.S. Supreme Court

". . . fair trade 'compulsion' against non-signers . . . if expressly authorized by Congress, would (not) transgress any constitutional prohibition."

—New York

". . . a reasonable exercise of the police power designed to protect manufacturers' good will inhering in a trade mark or brand."

—Delaware

". . . violates the Arkansas constitution."

—Arkansas

". . . offends our constitution."

—Georgia

". . . cannot be sustained as a lawful exercise of the state's police power."

—Michigan

". . . anti-competitive price fixing . . . not in line with our traditional concepts of free competition for the protection of the consuming public."

—Florida

REFERENCES

Fla. Stat. Ann., 541.03, 541.05

Liquor Store v. Continental Distilling Corp., 40 So. 2d 371 Florida

Schwegmann Bros. v. Calvert Distillers Corp., 341 U.S. 384

15 U.S.C.A. 45

General Electric Co. v. Klein, 106 A. 2d 205, Delaware

Union Carbide & Carbon Corp. v. White River Distributors, 118 F.S. 541

Harris v. Duncan, 67 S.E. 2d 692, Georgia

Shakespeare Co. v. Lippmen's, 54 N.W. 2d 268, Michigan

Miles Laboratories v. Eckerd, 73 So. 2d 680, Florida

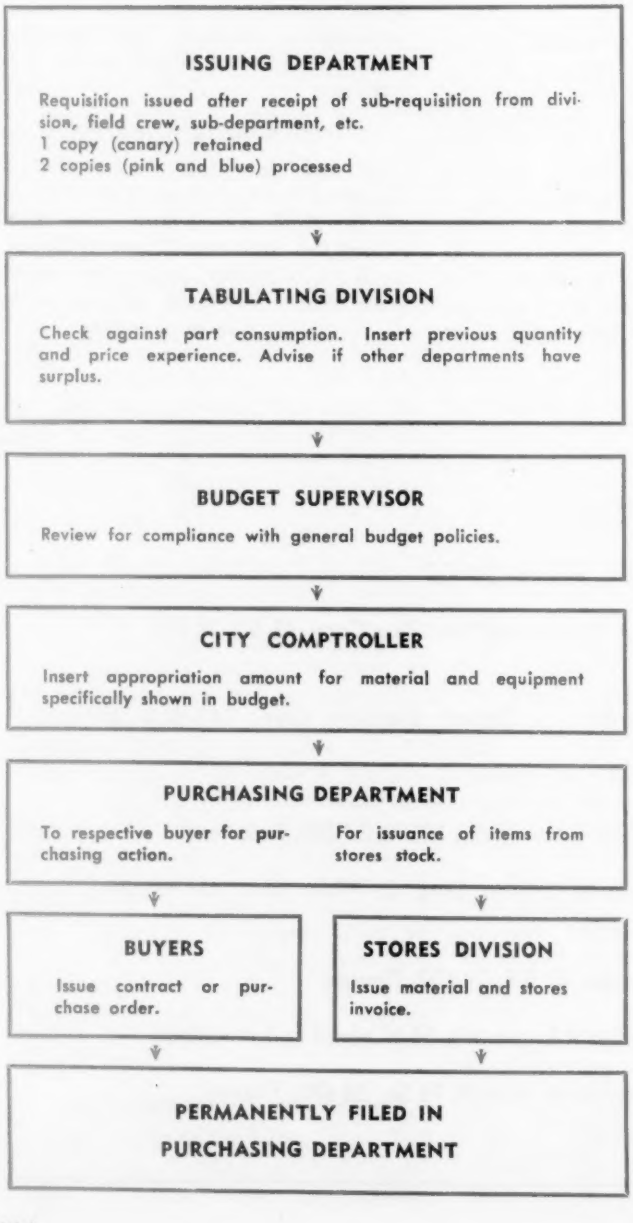
. . . for Better Requisitions

Purchasing Department conducts seminar for departments where requisitions are initiated to familiarize them with required procedure and to promote better requisition writing to insure prompt and accurate procurement

By *Andrew L. Lehrbaummer*

Deputy City Purchasing Agent
Central Board of Purchases
Milwaukee, Wisconsin

FLOW OF REQUISITIONS


ISSUING DEPARTMENT
Requisition issued after receipt of sub-requisition from division, field crew, sub-department, etc.
1 copy (canary) retained
2 copies (pink and blue) processed
TABULATING DIVISION
Check against part consumption. Insert previous quantity and price experience. Advise if other departments have surplus.
BUDGET SUPERVISOR
Review for compliance with general budget policies.
CITY COMPTROLLER
Insert appropriation amount for material and equipment specifically shown in budget.
PURCHASING DEPARTMENT
To respective buyer for purchasing action.
For issuance of items from stores stock.
BUYERS
Issue contract or purchase order.
STORES DIVISION
Issue material and stores invoice.
PERMANENTLY FILED IN PURCHASING DEPARTMENT

THE Central Board of Purchases, City of Milwaukee, receives requisitions initiated in some 50 different departments, boards, and commissions. The procedure is well established and the forms are simple. However, as in all purchasing departments, there is a problem of having requisitions really *well written*—the requirement clearly stated to insure that proper materials will be procured, without the necessity of further inquiry by the buyer, and with a minimum of editing. In our case, the problem is aggravated by constant change in the personnel of the many departments, so that experience in requisition writing is frequently lost, whenever a new employee assumes this function. Also, some changes have been made within the purchasing department, such as complete codification of all items, and changes in paper flow. These, too, affected the requisition procedure.

An effective answer to this problem was found by conducting a *class in requisition writing*. The actual inception of this idea was via an anonymous contribution in the Mayor's Suggestion Box in the rotunda of the City Hall.

The suggestion seemed to be a good one, and it was promptly put into effect. Invitations were issued to the various requisitioning departments, and a total of 78 employees registered for the class. Two sessions were held on the selected day—a morning group for employees with less than one year of service, and an afternoon group for those with greater experience.

Purpose of the Classes

The purposes of the class were made clear at the outset. They included two basic considerations:

1. HOW requisitions are processed, and how they should be prepared to insure getting proper materials, supplies and equipment when needed.

II. WHY attention to this phase is important—the mutual benefit to requisitioning departments and to purchasing in promoting speedy, accurate procure-

ment, and to vendors in avoiding incorrect deliveries and facilitating prompt payments.

Questions were invited during any part of the discussion.

A chart showing the routing of requisitions was furnished to each employee, and is shown herewith. Many of those present were not aware that their requisitions were processed through three other departments prior to reaching the Purchasing Department, each having a definite function to perform. This gave them a new appreciation of the time involved. Also, in the future, when a requisition is to be retrieved after leaving the issuing department, the employee will be familiar with the routing so that it can easily be found.

Preliminary Processing

Albert Bethke represented the Tabulating Division of the Comptroller's office, the first department to which requisitions are directed. Here the quantities shown on the requisition are checked against past consumption over a similar period. Then, for the buyer's information, they insert the quantity of the item which was purchased during the previous year, and the lowest price paid. Also, they are in a position to know whether any other departments have surpluses of this particular item; in such instances, these are suggested to the buyer for transfer.

Donald Schauer represented the Budget Supervisor—next step in the processing. Here, all requisitions are reviewed for compliance with the general budget policies established by the Board of Estimates. Requisitions calling for items on which a study is being made or contemplated, are scrutinized for conformity with the program. Unnecessary spending or "loading up" by using unexpended funds at the end of the year is also closely watched. The forms control program on all printed and ruled forms, carried on in conjunction with the printing buyer in the Purchasing Department, is operated from this point.

Norman Sentz, representing the City Comptroller, explained the "Manual of Expense Accounts" which gives information on the proper allocation of budget appropriations to the correct category of expense classifications. He explained the use of fund numbers to insure accurate accounting, and clarified the accepted distinctions between supplies and equipment.

Copies of the various types of requisition forms were also shown and explained. Sub-requisitions are issued by the various divisions, bureaus, field crews, etc., to the main office of their respective departments. It was impressed upon those responsible for issuing these, that they should be forwarded promptly to insure early processing. From the sub-requisitions, the general office of each department, board, or commission prepares the requisitions in triplicate, two copies of which are sent on the prescribed route to the Purchasing Department. There is a small form for normal use, and a larger form for use when a number of separate items or an unusual amount of description is necesary on a requisition.

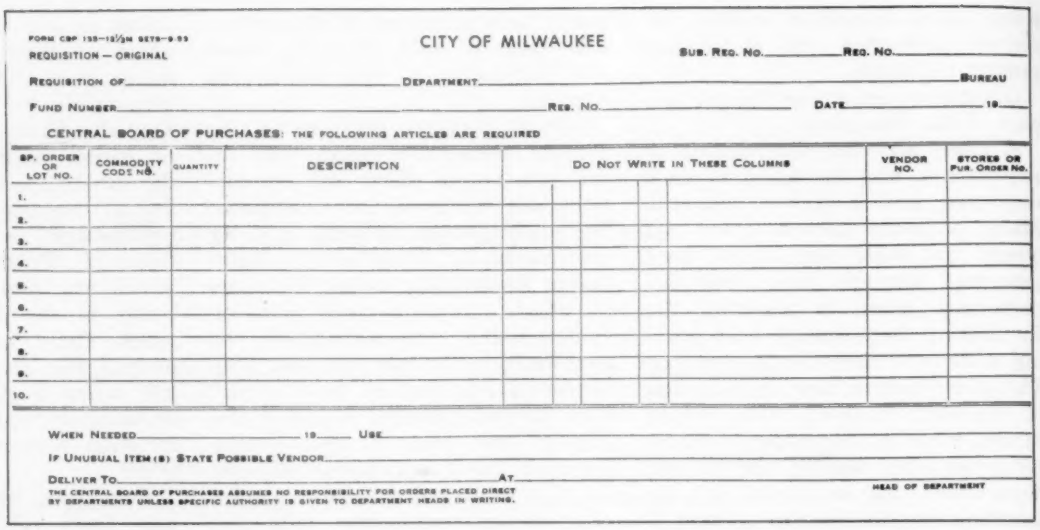
Employees were urged to combine those sub-requisitions which:

1. Represent expenditures from the same fund.
2. Are like items.
3. Call for items available in stores. (Reference was here made to the Stores Catalog, which every department has on file, and which lists all the items carried in the municipal storehouse).

Each commodity that the City of Milwaukee buys is coded, and the use of this codification catalog was explained. In addition to the proper descriptions for all commodities, it also tells when emergency purchases are justified, and the manner of payment; gives information regarding the submission of requisi-

FLOW OF PURCHASE ORDERS

	Step 1—AUDIT	Step 2—DISTRIBUTION	Step 3—PAYMENT	Step 4—VOUCHER
Copy 1 COMPTROLLER	To Comptroller—Returned to Purchasing Department	Retained in Purchasing	To Tabulating Div. with Copy 4	To Comptroller for filing
Copy 2 VENDOR		Sent to Vendor		
Copy 3 PURCHASING		Retained in Purchasing awaiting invoice receipt and checking	Filed in Purchasing	
Copy 4 DEPARTMENT		To requisitioning dept. to be signed when material is received	To Tabulating Div. with Copy 1	4-part voucher issued to Comptroller for filing: 1. Check and remittance advice 2. Comptroller 3. Department 4. City Clerk
Copy 5 COMPTROLLER	To Comptroller—Retained			
Copy 6 DIV. or SUB-DEPT.		To division or sub-dept., OR to City Hall receiving dept., OR to Inspector		



FORM CBP 155—12½M 9278—9.55
REQUISITION — ORIGINAL

CITY OF MILWAUKEE

SUB. REG. NO. _____ REG. NO. _____

REQUISITION OF _____ DEPARTMENT _____ BUREAU

FUND NUMBER _____ REG. NO. _____ DATE _____ 19__

CENTRAL BOARD OF PURCHASES: THE FOLLOWING ARTICLES ARE REQUIRED

SP. ORDER OR LOT NO.	COMMODITY CODE NO.	QUANTITY	DESCRIPTION	DO NOT WRITE IN THESE COLUMNS					VENDOR NO.	STORES OR PUR. ORDER NO.
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

WHEN NEEDED _____ 19__ USE _____

IF UNUSUAL ITEM(S) STATE POSSIBLE VENDOR _____

DELIVER TO _____ AT _____

THE CENTRAL BOARD OF PURCHASES ASSUMES NO RESPONSIBILITY FOR ORDERS PLACED DIRECT BY DEPARTMENTS UNLESS SPECIFIC AUTHORITY IS GIVEN TO DEPARTMENT HEADS IN WRITING.

HEAD OF DEPARTMENT

The requisition form that starts purchasing action originates outside the purchasing department, but must be coordinated with buying procedures for smooth purchasing operation.

tions, the manner in which drums, carboys and other returnable containers should be handled, and instructions for the upkeep and repair of typewriters and other office machines.

The necessity for accurate descriptions on all requisitions was emphasized. They should be complete and should be detailed as shown in the codification catalog. This makes it unnecessary to call back for further information and lessens the chance of wrong deliveries by the vendor. For example, "one gallon green paint", "one thousand feet elevator cable", or "one office chair" is not enough.

The requisition should not be crowded. A line should be allowed between items for insertion of previous purchase information by the Tabulating Division and for editing by the buyer. The typing (no hand writing allowed) should be *on* the lines, to present a neater requisition.

Under the "when needed" section, employees were urged to foresee their needs for 60 days, if possible. Purchasing, being a service organization, has many unusual calls, and stocks of all needed items cannot be kept always on hand. The date needed should be genuine, not a needless hurry-up or a case of "crying wolf".

In the "use" section, only the information which helps to furnish proper material to do the job or to help locate a source of supply should be inserted. It is often advisable to name the job on which the material is to be used. But in many cases the use is obvious and no entry is needed. On one recent requisition for a power lawn mower, the department graciously volunteered the "use" information—"To cut the grass."

Many of the items purchased by a city are technical. Therefore a space is provided for the information: "If unusual item(s), state possible vendor." Here the department is urged to indicate possible sources of supply or prospective bidders' names. However, employees were warned not to make any commitments or to permit anyone in their departments to obligate themselves. Wherever practicable, Purchasing would obtain sealed bids.

Supporting information relating to the requisition, such as specifications, blueprints, copy for printed matter, etc., should accompany the requisition and should be in final form. It should be submitted only after thorough review by the requisitioning department. Many times, changes in specifications necessitate the cancellation of pending bids and cause delay. Whenever printing copy is changed after an order has been awarded and work begun, the cost of the change is very high.

Reference to the previous similar transaction is encouraged. It often clarifies a point and assures that the successful bidder at that time will be given a request to quote again.

The signature of the department head is required on all emergency purchases and on all requisitions where the material is called for by the bearer. This is in accordance with the instructions on the back of the requisition form, with which all departments should be familiar. Before signing, department heads should review the requisitions to determine whether the proper quantity and quality is being ordered.

For buying purposes, an emergency is recognized as such by the Central Board of Purchases only when a breakdown in service occurs during a period when the office of the Department of Purchases is not open for business, and it is vitally necessary that materials, supplies or equipment be obtained for immediate use to restore operation of the service. When this condition arises, the necessary items may be obtained by the agency concerned, from the most practicable source. A requisition for whatever has been so obtained must be promptly forwarded to the City Purchasing Agent, together with a communication explaining the emergency.

If an emergency arises when the Purchasing Department is open and there is not enough time to process the requisition through the usual steps, authority to make a purchase can be extended to the agency by one of the buyers, over the telephone. However, in all instances where time will allow, the requisition is taken through the regular channels, and the order is placed by the Purchasing Department as soon as possible.

Special attention was called to the statement concerning unauthorized purchases, shown on the reverse side of the requisition. This reads: "Any city official or employee who buys directly for his department and then issues a requisition on the Department of Purchases when the purchase has been completed, subjects himself personally to the charge of the goods thus ordered."

Two copies of all orders placed by the Purchasing Department are sent to the requisitioning depart-

(*Please turn to page* 254)

The Key to Effective Conversation

The basic essential of good business talk is to establish a ground of common interest

By Dr. Donald A. Laird

EDGAR R. was a young insurance salesman who liked his job and was working hard to reach the top. But his sales record suddenly began to slip. The district manager feared the young man was just a flash in the pan and gave Edgar a few fight talks. Sales still remained low. Where Edgar used to leave them sold, now he left them cold.

A counselor at the YMCA, where Edgar lived, lent a helping hand and discovered the reason for the slump. Sales zoomed upward immediately. Here's the story.

Just before his slump, Edgar had been top man in the district, and was given a prize of an all-expense trip to Havana. That caused his downfall. He was so interested in the new sights and customs he had seen that he talked about them to everybody. He carried a pocketful of snapshots to illustrate his remarks. It didn't occur to him that his travelogue talks did not interest others. He had changed himself into a bore.

It is all too human for us to talk about our own interests. That takes little effort, and is immensely satisfying to our egos. But what counts in starting and carrying on a conversation is the other person's interests. Most of us are able to control the yen to talk about ourselves, once we appreciate the importance of this. Incurable "I-strain"is the sign of the neurotic or emotionally immature person. They may be brilliant talkers, but listeners have little interest in their self-centered topics—their minute recital of what they did and why, their aches and pains, their likes and dislikes, their opinions on all things big and little.

Edgar had no trouble switching his conversation back to topics in which others were interested. That closed the gap between him and his acquaintances, and they stuck with him later as he gradually turned to talking about *their* insurance.

Some one has said that talking about something that does not interest others is like scratching where there is no itch. Find out what they itch to talk about, and start conversations on that.

Capture Their Interest

A large and important part of business is carried on through conversations—with your associates, customers, and the salesmen who come to call. These conversations all have a purpose, so you have a point of common interest around which the conversation can be planned. Don't let it get lost or confused by wandering off on unrelated conversational by-ways. But you may have to lead up to the important point by way of their special interests.

Individuals vary from each other more in their interests than they do in physical appearance. Look alikes may not like alike. Interests give the key to individuality. Each person is a bundle of likes and dislikes, preferences and aversions, which make him interested in some topics and bored by others. About the worst blunder in starting a conversation is to assume that the other

person has the same interests that we do. Each is a law unto himself in this respect. As soon as we touch a subject in which they are interested, we begin to click with them.

There are several psychological reasons for this power of interests.

Topics which bear on their interests *attract* people, while other topics leave them neutral or may actually repel them.

Topics in which people are interested are *pleasurable*, even though it may be old stuff. But topics outside their interests usually leave them feeling blah or unhappy.

Interests *give persistence*. When the conversation touches their interests, the talk lasts; their listening gains momentum. When the other person keeps the conversation going, it's a sign you have found a topic that interests him.

People also *remember* those things that interest them. They quickly forget about your trip to Havana, unless they've been there too or hope to go. But they may remember the story of a neighbor's plumbing problems a long time, because the incident and the problem are closer to home. Conversation that the other person thinks worth remembering is thus usually in line with interests he already has, and has no bearing on the philosophical importance of the topic.

So, at the start of the conversation, it pays to forget one's own special interests, and to focus the talk on the other's. Then he will be attracted, find it pleasurable, keep talking on the topic, and remember it longer. But if we talk about things of interest to ourselves, we might as well be talking in our sleep.

Is He Interested?

Some people are frank enough to exhibit their lack of interest. Alfred Harmsworth, the king of publishers, did not hesitate to say, "O Lord! That bores me." Henry Ford was more subtle. Visits with outsiders were always held in the office of another executive. When Ford lost interest, he walked out, leaving the bore on the other executive's hands.

Most people, however, put up with uninteresting talk in silent suffering. They don't like to be impolite, so do not tell a talker bluntly when they are bored. It is up to us to size up attitudes and figure out whether they are interested. Here are some helps:

1. The time factor is pretty reliable. If we have talked for a full minute and they haven't tried to take part, we are probably barking up the wrong tree. They may politely inject a "Yes" or an "Uh-huh", but those cannot be taken as signs of positive interest. If they haven't jumped into the talk within a minute, it may be smart to switch to a different topic.

2. Do their facial expressions brighten up? If they watch you, maybe they are interested, but they may watch you out of courtesy—or curiosity. So notice if their faces brighten up in interest. Folklore places emphasis on watching eyes for expressive signs. But scientific experiments indicate that watching the expression around the mouth will give you a better idea of how you are registering with them.

3. Do they try to interrupt you? That is a sign of interest—if they interrupt with remarks on the same topic. By observing the mouth, you will see an interruption coming before it is spoken. When they interrupt to carry on the same topic, you have been a success in arousing their interest. Let them carry on.

4. But do they interrupt you to talk about something else? That means you have already said too much on the former topic. Drop it, and join in the one they have brought out. After all, you can't make it interesting merely by talking longer about it. Better quit and find a new tack while the quitting is good.

You Can't Force It

Several little tricks are commonly used to trap the other's interest. As a matter of fact, they seldom work.

One of these is to preface remarks with "You will be interested" or "You'll find this fascinating." A person's interests take a life-time to develop, and they can't be changed by assertion. If we do try to change their interests at the start, it becomes a harangue rather than a conversation.

Excessive enthusiasm over commonplace subjects, filling your talk with exclamation points to generate artificial excitement is another trick that usually backfires. "Tremendous, amazing, wonderful, thrilling, marvelous, super" is the sort of talk that is associated with the circus barker, where people expect to be fooled, so they don't take it seriously.

Others may seek the same result by talking in a rapid-fire, explosive manner. The scientists have a word for that—it's *logospasm*. The overly enthusiastic talker makes petty topics sound like a three-alarm fire which no one else can see. The usual reaction is, "So what?" Your personal enthusiasm about topics of scant interest to others seldom arouses their interest. They may even think you a bit queer for going overboard about something of such minor consequence.

The person who talks with real animation does hold attention better than the prosaic talker. But though vivacity may hold the listener's ears, it doesn't necessarily reach what lies between the ears unless the speaker strikes a topic of real interest.

Don't let enthusiasm turn into gush. That merely makes people cautious.

If you have to exaggerate, make it a whopper so that people will understand you don't expect to be taken literally. Better yet, make it picturesque, to bring a chuckle and arouse at least the interest of amusement. Then that interest may be transferred to the subject. Abraham Lincoln had the gift. In describing a man who was exceptionally tall (a fact that was probably of little interest in itself) he said, "He's so tall that when his feet get cold, his head doesn't know it until ten minutes later." Most of us, however, have to stick to more literal facts which are in step with the interests of those with whom we are talking.

Arousing curiosity is a trick that helps hold interest for a while, but seldom for more than a few minutes. And remember that when you arouse curiosity, you will have to satisfy it.

"I know something I won't tell you," is a familiar childhood bribe. It's pretty childish in an adult conversation.

"I'll have a surprise (or good news) for you later," is another example. But if you don't produce a real surprise, or real good news—and within a few minutes—you may lose their confidence along with their interest.

"I don't know whether I should tell you this or not," may also arouse curiosity. At the same time, it may brand you as a gossip.

Another lowers his voice and looks around as if he didn't want to be overheard. The suggestion of confidential information arouses curiosity—for a few minutes. But if it's something that he has known all the time, it falls flat.

One of the best ways of arousing real curiosity in conversation is to skip a few details, leave a few gaps. Incidentally, it's a good technique

(*Please turn to page 222*)

Here is the most complete fire protection program ever offered

TRAINING FOR YOUR PERSONNEL at your plant is provided by Ansul fire control experts without cost to you.

VISUAL AIDS for your safety meetings designed to make all your employees fire-control conscious.

CUSTOMER SCHOOL AT MARINETTE — best equipped fire control school available for training your key safety personnel.

COMPLETE PLANT SURVEY provided by Ansul is designed to give you the best fire protection possible at the lowest cost.

Ansul Fire Equipment is Faster, More Effective

A positive activating system puts Ansul's "Plus-Fifty" dry chemical to work immediately. To insure full fire coverage, patented nozzles deliver the right kind of stream for your fire protection problem (low velocity or long range). Ansul extinguishers are water-tight, corrosion resistant, always ready for action, even after extreme weathering. Quality features like these make it possible for Ansul to back their equipment with a 5-year warranty.

Call the Ansul Man!

Get in touch with your local Ansul man through the "yellow pages" or write ANSUL CHEMICAL COMPANY, Fire Equipment Division, Department F-84, Marinette, Wisconsin.

ANSUL

For More Information Circle No. 159 on Inquiry Card—Page 17

Price Laws Don't Prohibit Bargaining

Modern interpretation of price laws takes a realistic view of how business is done . . . there's nothing illegal about bargaining to get a better price . . . discrimination is unlawful, but the buyer isn't expected to know all the details of his suppliers' costs and quotations . . . also, the government does expect a buyer to take full advantage of legitimate tax exemptions

By Leo T. Parker

TWO important subjects of law involving purchasers are (1) the legal rights of purchasers to purchase merchandise at low prices, and (2) the right of purchasers to avoid, reduce, or eliminate taxation. Recently the Supreme Court of the United States has rendered outstanding decisions which establish new law in both these fields.

First, I shall review the Supreme Court decision which clearly illustrates when, and under what circumstances, a purchaser may expect to receive relatively low prices on merchandise without violating either the Clayton Act or the Robinson-Patman Act.

When the Clayton Act was revised to prohibit price discrimination, it was so frustrated by inadequacies that Congress in 1936 enacted the sweeping amendments to that Act contained in the Robinson-Patman Act. Before this 1936 amendment, the law exempted price discrimination in the sales of different quantities of like goods. This exemption was interpreted as leaving quantity-discount sellers free to grant discounts to quantity buyers that exceeded any cost savings in selling to such buyers. In an effort to tighten the restriction against price discrimination inimical to the public interest, Congress enacted two provisions.

The first provision, known as the Robinson-Patman Act, provides that it shall be unlawful for any person to discriminate in price between different purchasers of commodities of like grade and quality, where such commodities are sold for use, consumption, or resale within the United States or any Territory thereof. The law goes on to state that it is unlawful to so discriminate only if such discrimination substantially lessens competiton or tends to create a monopoly, or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination, or with customers of either of them.

TREMENDOUS BUYING POWER FOR MASS DISTRIBUTION RAISED THE QUESTION OF WHETHER QUANTITY PRICES ARE IN VIOLATION OF THE ROBINSON-PATMAN ACT

Another clause in the Act states that none of the above is unlawful if the testimony shows that price

Look at washroom economy from a new angle...

NIBROC® TOWELS

dry drier faster!

Industry uses more Nibrocs than any other paper towel because from *every* angle they mean real washroom savings...

1. **They *dry drier faster* . . . your employees save time!**
2. **One does the job . . . you save towels!**
3. **Soft, lint-free, won't come apart when wet—your employees like them best!**
4. **Nibroc cabinets hold more towels . . . your maintenance costs are less!**

All good reasons for you to take another look at your washroom economy and switch to Nibrocs.

NEW SOFWITE AND SOFTAN TOILET TISSUE

Super-Quality Nibroc Tissue is softer because "NIBRO-CRAFTED."* Costs no more than ordinary tissue. Save by ordering towels and tissue together. See your classified directory for nearest Nibroc dealer. Or write us at Boston—Dept. NG-1—for samples.

*A unique combination of fibres, exclusive with Brown Company, produced after years of research.

BROWN QUALITY COMPANY
Berlin, New Hampshire

General Sales Office: 150 Causeway Street, Boston 14, Mass.

SOLKA AND CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS
NIBROC KOWTOWLS • NIBROC TOILET TISSUE • BERMICO SEWER PIPE AND CONDUIT
ONCO INSOLES • CHEMICALS

For More Information Circle No. 160 on Inquiry Card—Page 17

differences or differentials make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from differing methods or quantities in which the merchandise is sold to the purchaser.

Therefore, once the Clayton Act and the Robinson-Patman Act are thoroughly understood, it seems that a buyer may, without being liable in treble damages, purchase merchandise in any quantity and at any price if the testimony shows that the price differences or reductions, when compared with prices paid by other purchasers, merely represent a saving to the seller or manufacturer either in his cost of manufacture, the costs of normal sales, or the usual costs of delivering merchandise to other buyers. Of course, no buyer is liable for violating the Robinson-Patman Act unless the testimony proves that he was knowingly guilty of receiving discriminatory prices.

COURTS HOLD THAT IT IS UNREALISTIC TO INSIST THAT BUYERS HAVE FULL KNOWLEDGE OF SELLERS' COSTS

Buyer May Bargain

Another important point of law is that no law is designed to prevent a buyer from bargaining and buying goods at any price he can receive from the seller, provided in so doing he does not know or realize that he is receiving discriminatory prices, or that his acts tend to lessen competition.

For example the Supreme Court of the United States explained that the new law made price discrimination in the sale of like goods unlawful without regard to quantity, although quantity discounts, like other price differentials, could still be justified if they made "no more than due allowance" for cost differences in sales to different buyers. Congress in addition sought to reach the large buyer, capable of exerting pressure on smaller sellers, by making it unlawful "knowingly to induce or receive a discrimination in price".

In its decision, the Supreme Court went so far as to hold that in suits against buyers for price discrimination, the Federal Trade Commission is obligated to prove that the buyer's differentials or reduced price on goods was accepted by him when "knowing that he was being benefitted by discriminatory prices. The Supreme Court held that under no circumstances need a buyer prove that he did not know or realize that he was receiving discriminatory prices. In this respect, the court said:

"Insistence on proof of costs by the buyer might thus have other implications; it would almost inevitably require a degree of cooperation between buyer and seller, as against other buyers, that may offend other anti-trust policies, and it might also expose the seller's cost secrets to the prejudice of arm's-length bargaining in the future. The Federal Trade Commission seems to argue that the substantive violation occurs if the buyer knows only that the prices are lower than those offered other buyers. Such a reading not only distorts the language but would leave the word 'knowingly' almost entirely without significance."

When Does Buyer Know?

So, therefore, this law is settled: A buyer never is liable for violation of the Clayton or Robinson-Patman Act unless the proof and testimony shows conclusively that he knowingly accepted discriminatory prices. Hence, an important question is: "What proof must be given to convince the court that the buyer did know that he was receiving discriminatory prices, and who must supply this testimony?"

Until the Automatic Canteen case, this question had never been satisfactorily answered. The decision of the Supreme Court of the United States answered this question of law.

In Automatic Canteen Company v. Federal Trade Commission, 73 S. Ct. 1017, the testimony showed facts, as follows: The Automatic Canteen Company is a large buyer of candy and other confectionary products for resale through 230,000-odd automatic vending machines operated in 33 States and the District of Columbia. This company was incorporated in 1931, and has enjoyed rapid growth and has attained a dominant position in the sale of confectionary products through vending machines.

Suit was filed against the company and the Federal Trade Commission introduced evidence that it received, and in some instances solicited, prices it knew were as much as 33% lower than prices quoted other purchasers, for the same quality of merchandise. However, during the trial the Commission made no attempt to show that the price differentials exceeded any cost savings that the sellers may have enjoyed in sales made to the company. The Commission argued that a *prima facie* case of violation had been established by proof that the buyer received lower prices on like goods than other buyers.

In other words, the Commission presented no testimony negativing the existence of cost savings, but it decided that the company or purchaser violated the Robinson-Patman Act simply because it purchased merchandise at lower prices than normally received by other purchasers. The Supreme Court held that this kind of evidence was not sufficient to justify a decision holding the company or buyer guilty of violating the Robinson-Patman Act. The court said:

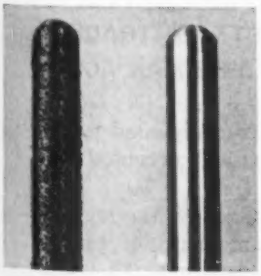
"We are unable, in the light of Congressional policy as expressed in other anti-trust legislation, to read this ambiguous language as putting the buyer at his peril whenever he engages in price bargaining. Such a reading must be rejected in view of the effect it might have on that sturdy bargaining betwen buyer and seller for which scope was presumably left in the areas of our economy not otherwise regulated. We therefore conclude that a buyer is not liable if the lower prices he induces are either within one of the sellers' de-

Solnus may be used for lubricating such parts as plain bearings, anti-friction bearings, linkages, slides, cams and gears.

Also for use in gear boxes, hydraulic systems, circulating systems, industrial diesel engines, and compressors.

SOLNUS GENERAL PURPOSE OILS SAVE YOU MONEY THREE WAYS

A high grade lubricant for a "squirt-can" price



ANTI-RUST TEST

Actual photograph shows steel test bars following test. Right bar was tested with Solnus. Left bar with an uninhibited oil.

VERSATILE. Solnus oils sell in the medium price bracket, yet can do many jobs on which you may now be using higher priced oils. While Solnus' low price makes it practicable for once-through uses, its high quality also makes it suitable for enclosed or circulatory systems. Use Solnus for all your general purpose lubrication and you can take advantage of the economies of bulk prices.

SIMPLIFIES INVENTORIES. Because Solnus may be used for so many applications, you can reduce the number of oils you need to store. You save space in your oil room and greatly simplify your inventory and maintenance problems.

LONG LIFE. In actual field performance, Solnus has been proven to have excellent service life under all types of operating conditions. In addition to a long service life, Solnus has the following characteristics:

Excellent anti-rust protection
Superior anti-corrosion protection
Very low carbon-forming tendency
High film strength
Very low pour characteristics
Mild cleansing action

These are a few reasons why Solnus oils give you "more lubrication per dollar." Write for the technical bulletin on Solnus oils. Dept. PG-1.

INDUSTRIAL PRODUCTS DEPARTMENT

SUN OIL COMPANY

SUNOCO®

PHILADELPHIA 3, PA. • SUN OIL COMPANY LTD., TORONTO & MONTREAL

Refiners of famous High-Test Blue Sunoco Gasoline

fenses, such as the cost justification, or not known by him not to be within one of those defenses."

Burden of Proof

The Supreme Court also held that the burden of proving that the buyer is guilty of violating the Clayton Act or the Robinson-Patman Act is on the Federal Trade Commission. The court said:

"Assuming, as we have found, that there is no substantive violation if the buyer did not know that the prices it induced or received were not cost-justified, we must in this case determine whether proof that the buyer knew that the price was lower is sufficient to shift the burden of introducing evidence to the buyer. It would not be fair to say that the burden of coming forward with evidence as to costs shifts to the buyer as soon as it is shown that the buyer knew the prices differed. Certainly the Commission with its broad power of investigation is on a better footing to obtain this information than the buyer."

Notwithstanding the above explained law, which quite apparently makes it difficult to convict a buyer of violating the Robinson-Patman Act, yet it is important to know that the Supreme Court clearly explained that not in all cases is it necessary for conviction that the Federal Trade Commission introduce before the court "definite" proof that the reduced prices received by the buyer were justified by savings to the seller. In this respect the court said:

"Enforcement of the provisions of 2 (f) against such a buyer should not be difficult. Trade experience in a particular situation can afford a sufficient degree of knowledge to provide a basis for prosecution. By way of example, a buyer who knows that he buys in the same quantities as his competitor and is served by the seller in the same manner, or with the same amount of exertion as the other buyer, can fairly be charged with notice that a substantial price differential cannot be justified. The Commission need only to show, to establish its prima facie case, that the buyer knew that the methods by which he was served and quantities in which he purchased were the same as in the case of his competitor. If the methods or quantities differ, the Commission must only show that such differences could not give rise to sufficient savings in the cost of manufacture, sale or delivery to justify the price differential."

According to a late higher court decision, a manufacturer may, without violating any anti-trust law, sell his entire output to a purchaser. Another important point of law is that a seller or manufacturer who breaches an agency contract is liable only in provable damages suffered by the purchaser. In order to receive an approved verdict for damages, the purchaser must "prove" the actual damages he sustained.

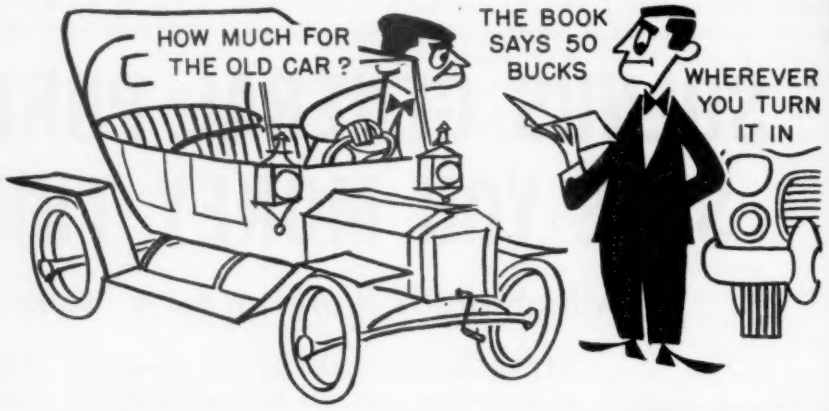
In other words, it will not do for the purchaser to prove the profits another purchaser made after breach of the contract. Both these important points of law were decided by a higher court in the late case of Fargo Glass & Paint Company v. Globe American Corporation, 201 Fed. (2d) 534. In this case it was alleged that a manufacturer violated United States 38 Stat. 731, which provides:

"Any person who shall be injured in his business or property by reason of anything forbidden in the anti-trust laws may sue therefore in any district court of the United States in the district in which the defendant resides or is found or has an agent, without respect to the amount in controversy, and shall recover threefold the damages by him sustained, and the costs of suit, including a reasonable attorney's fee."

No Violation Proved

The testimony showed these facts: A manufacturer of gas ranges and a retail dealer signed a written contract by the terms of which the manufacturer gave the retail dealer an exclusive "agency" to sell its ranges in a named territory. Later the manufacturer canceled this contract and made another contract with a corporation, the Maytag Company, by which the manufacturer sold its entire output of ranges to the latter company. The retail dealer, whose contract the manufacturer had cancelled, sued the manufacturer for three times the amount of damages sustained by him as a result of what he claimed to be a violation of the anti-trust laws when the manufacturer sold its entire output to the Maytag Company.

The retail dealer proved that the Maytag Company made a net profit from the sale of ranges in the restricted territory of $39,560.36. In view of the fact that the retail dealer argued that this profit was made by the Maytag Company in the same territory for which the manufacturer had cancelled his agency contract, the lower court entered judgment for the retail dealer for three times that amount, and held $30,000 reasonable allowable attorney's fee. In other words, the lower court, including the lawyer's fees, held the manufacturer liable to the retail dealer, whose agency contract the manufacturer had cancelled, for $148,976.



COMBINATIONS OR CONSPIRACIES THAT RESTRAIN TRADE UNREASONABLY ARE IN VIOLATION OF THE SHERMAN ACT

The manufacturer appealed to the higher court, which reversed the verdict, saying:

"The profits made by Maytag are not the proper measure of plaintiff's (dealer's) damages. There is no evidence to justify the assumption that plaintiff (retail dealer) would have sold the same number of ranges that Maytag sold, or that it would have realized the same profit on sales it made."

Finally, the higher United States Court decided that the manufacturer had not violated any anti-trust law. In this respect, the court said:

"In determining whether a con-

Yoloy reduces body weight, increases payload

Above: Trucks with Perfection Special Contractors' Type Body —all fabricated from Yoloy Steel.

THE YOLOY FAMILY

High in resistance to corrosion, shock and vibration, easy to fabricate, easy to weld.

YOLOY
(Nickel-Copper)
Low Alloy High Strength Steel

YOLOY E
(Nickel-Chrome-Copper)
Low Alloy High Strength Steel

YOLOY C
(Chrome-Copper)
Corrosion Resistant Steel

YOLOY IS AVAILABLE in sheets, plates, strip, pipe, mechanical tubing, bars, shapes and cold finished bars.

Here's another fabricator who finds it profitable to use Youngstown's low-alloy high-strength steel. The Perfection Steel Body Co., Galion, Ohio, summarizes its experience with Yoloy Steel as follows:

"The physical properties of Yoloy are such that lighter gauges used in the construction of dump bodies result in considerable weight reduction and thereby provide increased payloads. Yoloy's corrosion resisting qualities provide the additional advantage of lending longer life to the equipment".

Youngstown

QUALITY YOUNGSTOWN SERVICE

THE YOUNGSTOWN SHEET AND TUBE COMPANY *Manufacturers of Carbon, Alloy and Yoloy Steel*

General Offices: Youngstown, Ohio - Export Office: 500 Fifth Avenue, New York 36, N. Y.

SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT - MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - BAR SHAPES - WIRE - HOT ROLLED RODS - COKE TIN PLATE - ELECTROLYTIC TIN PLATE - RAILROAD TRACK SPIKES

For More Information Circle No. 163 on Inquiry Card—Page 17

tract to sell the entire output of an industrial plant to another, or a contract to purchase the entire requirements of a business of another, violates anti-trust laws, there is to be taken into consideration the effect and purpose of the contract. Where such a contract has for its object a legitimate purpose, and it only incidentally stifles trade, it is not within the inhibition of the statute disclosed in this record. The contract and arrangements between Globe (manufacturer) and Maytag did not violate the Sherman Act or the Clayton Act."

Must Prove Conspiracy

According to a late higher court decision a person, firm or corporation may be guilty of violating the Sherman anti-trust law if the testimony shows that it performed any act which prejudices "normal interest" of the buying public to buy merchandise or other commodity of a competitor.

For example, in National Used Car Market Report v. National Automobile Dealers Ass'n, 200 Fed. (2d) 359, the testimony showed facts as follows: 30,000 of the 43,000 new car dealers in the United States are members of the National Automobile Dealers Association hereinafter referred to as "Association". It publishes a used car price list or "Guide". The National Used Car Market Report hereinafter referred to as "Report", publishes the "Blue Book" and filed suit against the "Association" claiming that the latter is engaged in a combination in restraint of interstate commerce or a "boycott" of the pocket-size used car price list or "Blue Book". In other words, "Report" contended that the "Association" violated the Sherman Act by inducing its members to buy its "Guide" instead of buying the "Blue Book".

The lower court took the view that before the suit could be maintained, under the Sherman Act, "there must be injury to the public". The higher court reversed this verdict and in effect held that the "Report" may be guilty of violating the Sherman Act if it is proved that it entered into a conspiracy, contract, or combination calculated to prejudice the public interest, in purchasing the "Guide" instead of the "Blue Book". The court said:

"We think it might be determined as a matter of law that the broad trade boycott here alleged is reasonably calculated to prejudice the public interest. However that may be, we think it is not necessary to make specific allegations or proof of public injury in order to show that a trade boycott of such breadth violates the Sherman Act. Interstate commerce includes the interstate purchase, sale, lease, and exchange of commodities, and any combination or conspiracy which unreasonably restrains such purchase, sale, or exchange is within the terms of the Anti-Trust Act."

STORED GOODS ARE EXEMPT FROM TAXATION, BUT THE IMMUNITY CEASES WHEN PROCESSING BEGINS

Readers who desire to read leading higher court decisions on variations of this law, see Supreme Court of the United States cases as follows: Binderup v. Pathe Exchange, Inc., 263 U. S. 291; Fashion Originators' Guild of America, Inc. v. Federal Trade Commission, 312 U. S. 457; Standard Oil Company of California v. United States, 337 U. S. 293; and Apex Hosiery Company v. Leader, 310 U. S. 469.

Immunity to Taxation

There are several circumstances under which purchasers may be immune to taxation. This is so notwithstanding arguments to the contrary. Obviously immunity to taxation can arise only under United States, State, County or City laws. Many law experts have in the past contended that the validity of laws of this nature will not be upheld finally by the Supreme Court of the United States. Nevertheless, a few months ago the Supreme Court of the United States "broke the ice" in this direction and upheld the validity of a United States Statute which make persons in military service immune to state taxation.

For example, in Damer v. Brodhead, 73 S. Ct. 721, a United States statute was litigated which provides that, for the purposes of taxation "of any person, or of his property, income, or gross income", such person shall not be deemed to have lost his regular residence or domicile by reason of being absent therefrom, in military service. The statute further provides that the personal property of such person shall not be "deemed to be located or present in" the state in which he performs military service.

One Damer was in military service of the United States Air Force. He was assigned to duty at Lowry Field, near Denver, Colorado. While in Colorado, taxing officials of this state assessed a tax on his personal property, which at that time was in the state. Damer paid the tax under protest, and sued to recover. His complaint pleaded that for many years he was, and at the present time is, a citizen and a resident of the state of Louisiana, and that in view of the above mentioned United States statute the state of Colorado could not tax any of his personal property irrespective of its nature.

The Supreme Court of the United States directed the State of Colorado to return to Damer the money he paid for taxation of his personal property and chattels situated in Colorado. This court said:

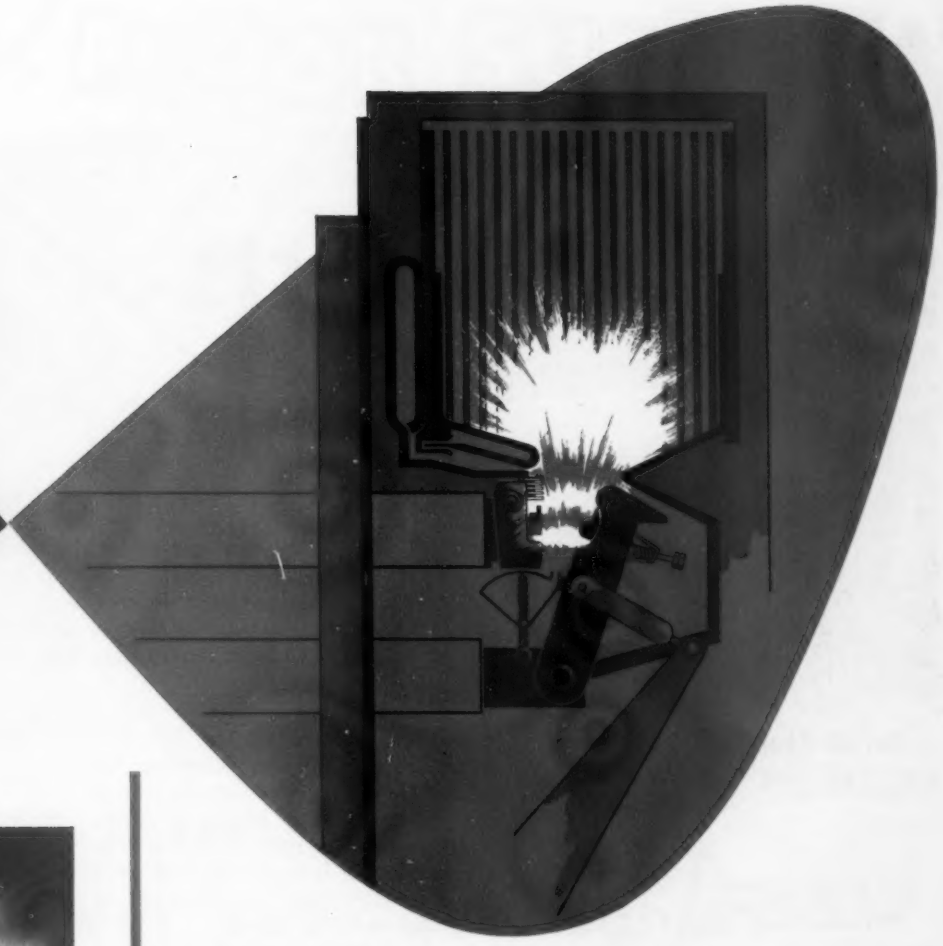
"The constitutionality of federal legislation exempting servicemen from the substantial burdens of seriate taxation by the states in which they may be required to be present by virtue of their service, cannot be doubted."

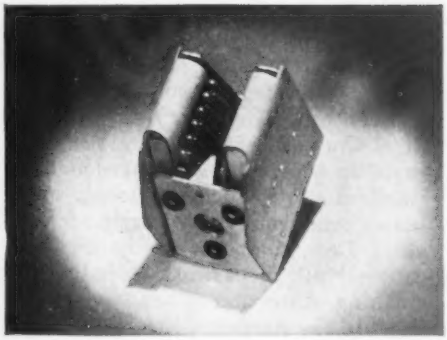
This court also explained that this non-taxing law is applicable to all merchandise, as personal property and chattels, which a member of the military service has situated in his non-residence state whether or not he uses same merely for personal purposes or for business purposes. For further discussion of this interesting law see Carson v. Roane-Anderson Company, 342 U.

(*Please turn to page 262*)

things happen fast when

THE CURRENT SHOOTS THE CHUTE!





National Vulcanized Fibre barriers in the circuit breaker arc chute illustrated above really "torture" the arc—distort, elongate and tame it—so that no damage is done. Such severe service calls for excellent electrical properties and arc resistance. And, because it is a tough, strong material, vulcanized fibre also gets the nod for mechanical applications in the "breaker"—as bushings, pins, sleeves, washers, connector bars, etc. Maybe these applications will give you a clue as to how this material can help you. If you'll give us an idea of your intended end-use, we'll send appropriate technical and descriptive literature. Write to Dept. E-1.

Also manufacturers of Phenolite Laminated Plastic, Vul-Cot Waste Baskets, Peerless Insulation, Materials Handling Equipment, and Textile Bobbins.

In a circuit breaker when current overload occurs, the contacts open . . . a violent arc jumps across the gap . . . then is drawn upward through the breaker's "safety valves"—the arc chutes. In a split second, intense heat and dangerous gases are dissipated . . . the arc is quenched without harm to life or equipment.

National Vulcanized Fibre plays a vital and reliable role in this drama of industrial safety. It is utilized widely as a basic material in the sides and plates of arc chutes. Its inherent properties enable it to stand up under the rigorous punishment dealt by electrical energy "on the loose," and to help curb it effectively! These properties also make National Vulcanized Fibre the ideal material for dozens of other applications in power switching equipment and in thousands of uses within the broad electrical field. High dielectric and mechanical strength—excellent machinability—splendid formability—lightness of weight—great resistance to heat, shock and abrasion . . . name what you want in characteristics and capacity, and National Vulcanized Fibre is likely to have it, and more!

The chances are strong that there are many uses in your own business for versatile, economical National Vulcanized Fibre. Why not let us help you to find out?

Nothing takes the place of Vulcanized Fibre

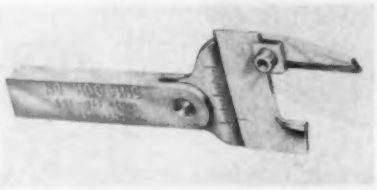
NATIONAL
VULCANIZED FIBRE CO.
WILMINGTON 99, DELAWARE

For More Information Circle No. 164 on Inquiry Card—Page 17

New Products Ideas

You can get more information on any new product shown in this section. Just check the number that follows each item and circle the corresponding number on the Inquiry Card, page 17. Drop the card in the mail and we'll do the rest.

Cut-off Tool Does Not Gouge or "Hog" into Work



A tool that ends the cut-off difficulties that plague most lathe operators—chatter and "hogging"—is said to have been developed by the Northrup Tool Co., Kalamazoo, Mich. The tool consists of a high-speed steel blade, a spring loaded blade holder, and a steel shank. The blade holder rides on top of the work, the tool acting as its own follower rest. The tool face is always at the work center. The result is that the tool eliminates hogging and chatter, improves work finish, cuts rejects and greatly reduces blade breakage.

Circle No. 41 on Inquiry Card—Page 17

Cut-Off Protects Boilers Preventing Puff Shutdowns

Shutdowns of boilers caused by momentary puffs can now be avoided, it is claimed, by means of a control which protects boilers in the event of mechanical or natural draft failure. It replaces conventional make-or-break switches and is suitable for all firing methods and boiler types. It also activates remote alarm systems or signal lights. The switch is designed so that the tube controlling cut-off delay operates more quickly in the warming up period than after the unit has been operating for any length of time. This provides super-sensitive response during burner light-off. It is made by Cleveland Fuel Equipment Co., Cleveland 9, Ohio.

Circle No. 42 on Inquiry Card—Page 17

Warehouse Truck Picks Load 30" Beyond Outrigger Wheel

A fork lift truck has been developed by the Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa., with increased efficiency in aisles as narrow as six feet. Hydraulically operated, the forks slide forward 20" to provide 30" of effective length beyond the outrigger wheels. As load is handled beyond the wheels, only enough underclearance is needed to permit fork entry. After the load is on the forks, they are retracted to bring the load back against the fork carriage for transportation. Capacity of the truck is 2500 lb at 15" load center.

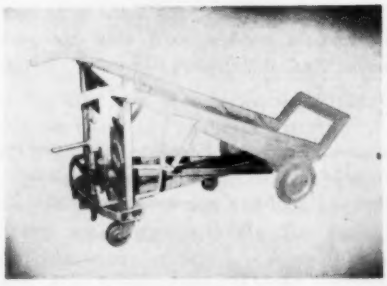
Circle No. 43 on Inquiry Card—Page 17

Hardenable Stainless Alloy

The insistent demand for hardenable alloys having the corrosion resistance of 18-8 stainless steel, but in cast form, is answered, according to Donegal Mfg. Co., Marietta, Pa., by DC-50 castings, produced under a licence agreement with Armco Steel Corp. DC-50 is essentially the same as Armco 17-4 PH hardenable stainless alloy which previously has been produced in wrought form only. Low temperature hardening of the alloy castings eliminates cracking, distortion or scaling problems. In the hardened condition, the new corrosion resistant alloy has a minimum tensile strength of 180,000 psi and a minimum yield strength of 165,000 psi. Its corrosion resistance is better than that of 12-14 chromium alloy.

Circle No. 44 on Inquiry Card—Page 17

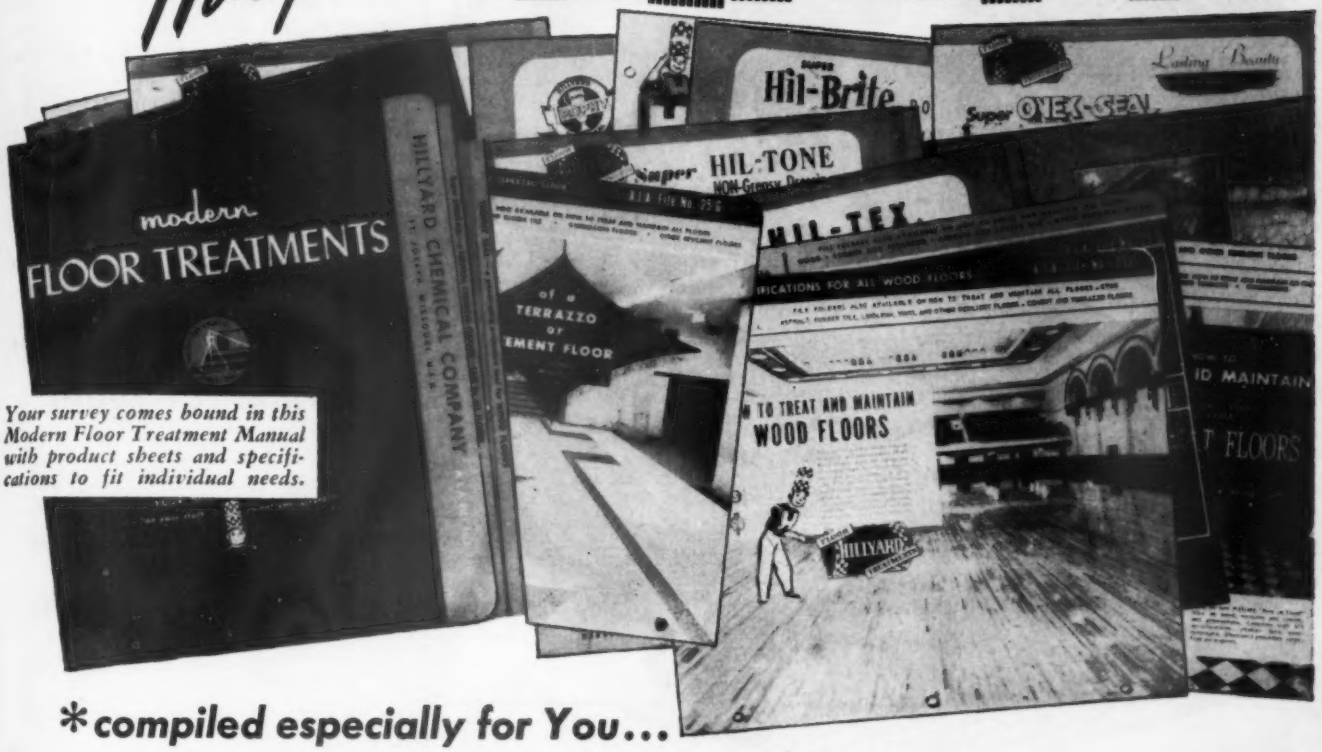
Carries 2-Wheel Hand Trucks on Infloor Draglines



A specially designed carrier enables 2-wheel hand trucks to be transported on an infloor dragline

(*Please turn to page* 130)

new Hillyard FLOOR SURVEY*



Your survey comes bound in this Modern Floor Treatment Manual with product sheets and specifications to fit individual needs.

***compiled especially for You...**

to answer your questions on particular floor treatments

From Survey to Service...

A Hillyard floor treatment plan can mean *real* savings to you.

After a complete survey of your floors a recommendation will be presented to you.

You'll find a Hillyard survey can bring benefits of labor and materials savings.

There's no cost—No obligation.

"On Your Staff... Not Your Payroll"

A qualified trained floor "Maintaineer" will make your survey. Half a century of experience and leadership stands back of his recommendations.

SEND THIS COUPON FOR A FREE SURVEY—NO OBLIGATION

HILLYARD CHEMICAL CO.
St. Joseph, Missouri

Please have your Maintaineer ® call and make a survey of my floors.

Name.....Title.....

Institution.....

Address.....

City.....State.....

FLOOR HILLYARD TREATMENTS

Proprietary Chemists Since 1907

ST JOSEPH, MISSOURI
Branches and Warehouse Stocks in Principal Cities

For More Information Circle No. 165 on Inquiry Card—Page 17

"HANDS" THAT HELP MOVE THE EARTH!

. . . those unseen hands that put action into the earth moving giants . . . the hundreds of shapes and sizes of steel castings that make up excavating and mining machinery. Hands that are unnoticed and are subject to shock, stress and abrasion . . . all examples of Unitcasting's dependability.

Gears, cams, rockers, sheaves, stanchions, levers, protective housings, and many other parts made to exacting standards . . . subject to rigid inspections. Foundry engineered Unitcastings are the answer when the going gets rough!

Assured dependability in parts? Specify Unitcastings! Unitcast's representative is as convenient as your telephone. Call today!

UNITCAST CORPORATION • Toledo 9, Ohio

In Canada: CANADIAN-UNITCAST STEEL, LTD., Sherbrooke, Quebec

Unitcast QUALITY STEEL CASTINGS

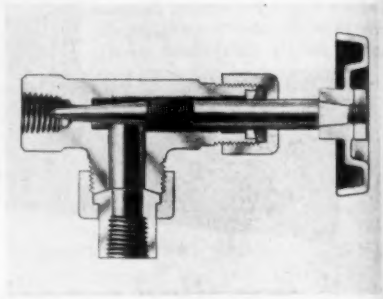
For More Information Circle No. 166 on Inquiry Card—Page 17

(*Continued from page* 128)

system. It locks the hand truck, containing a drum or other load, in position so that it may be held safely and securely for its trip on the dragline. As the 2-wheel truck is placed on the carrier, its axle is locked automatically on the carrier. The leg on the right side of the 2-wheel truck is locked to the carrier by a foot operated latch. This prevents the truck and drum from falling of the carrier, if the dragline is stopped. A simple flip of the dragline pin engages the carrier to the line. Manufacturer is Lewis-Shepard, Watertown, Mass.

Circle No. 45 on Inquiry Card—Page 17

Valves for Fine Metering



A line of forged needle valves with universal outlets, made by the Carpenter Valves Corp., 6723 Denison Ave., Cleveland 3, Ohio, features micrometer thread stainless steel stems for fine metering. The bodies of the needle valves are forged from brass, stainless steel or carbon steel. The valves can be furnished in mountings for instrument panels.

Circle No. 46 on Inquiry Card—Page 17

New Soldering Guns Handle Up to 275 Watts

Weller Electric Corp., 808 Packer Street, Easton, Pa., says its new soldering guns, model D-550, combine adequate heating capacity with accurate finger-tip control. Rugged enough to withstand the abuses of shop work, they incorporate the precision necessary for laboratory work. The five second heating helps to speed all types of factory maintenance and repair. An exclusive tip fastening arrangement assures full, constant heat by eliminating contact resistance and oxidation. The dual heat feature affords extra capacity where high heat is required, and provides a substantial increase in tip life. Two industrial models of the guns are available: the single heat 250 watt, or the dual-heat 200-275 watt model.

Circle No. 47 on Inquiry Card—Page 17

Joseph H. Snyder, President of the Color Corporation of America, tells:

"How we set a record with the Thunderbird!"

"When news got out about the Thunderbird, Ford dealers scheduled a big preview at Palm Springs, California," relates Joe Snyder of Color Corporation of America.

"But as the date drew near, it became clear to Ford that the one Thunderbird then in existence—a hand-made model—would have to stay there in Detroit!

"The solution? Giant natural color prints—and Air Express.

"Films were rushed to the Color Corporation in Tampa, and we made Hi-Fidelity color prints *larger than the top of a desk*. These were back in Detroit in record time—and in Palm Springs the day after!

"There is no other service comparable to Air Express. We would be just a local business without it.

"Yet Air Express rates are usually lowest of all. For instance, a 10-lb. shipment from Tampa to Detroit costs $5.06. That's 68¢ less than the next lowest-priced air service."

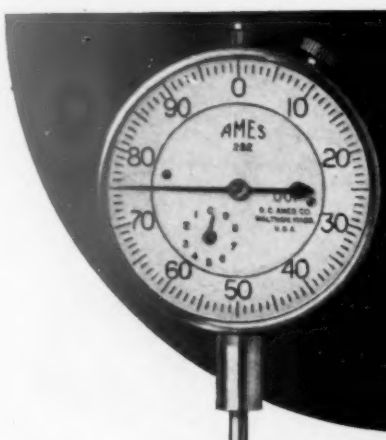
Air Express

GETS THERE FIRST *via U.S. Scheduled Airlines*

CALL AIR EXPRESS . . . *division of* **RAILWAY EXPRESS AGENCY**

For More Information Circle No. 167 on Inquiry Card—Page 17

AMES



...the preferred Dial Indicators

Over 16,000,000 cycles without wear or loss of accuracy . . . how many more will they complete?

Several Ames Long Range Dial Indicators *with plain bearings* are currently giving an amazing demonstration of performance and endurance under test. Several Model 282 Indicators, selected at random from our stock, still have their original accuracy—after more than 16,000,000 cycles each, at 240 strokes a minute, 9 hours a day.

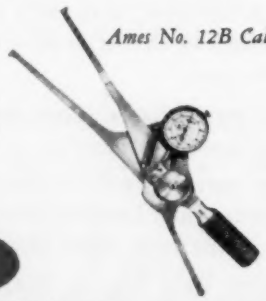
This outstanding record is made possible by Ames' use of simple basic design, highest quality materials, rugged construction . . . and expert craftsmanship.

How many more cycles will these Ames indicators complete?

Ames No. 12B Caliper Gauge

If you would like to have our recommendations on your measurement problem, send blueprints and specifications. And ask for your free copy of our catalog on Ames micrometer dial indicators and gauges.

Ames No. 2 Dial Comparator



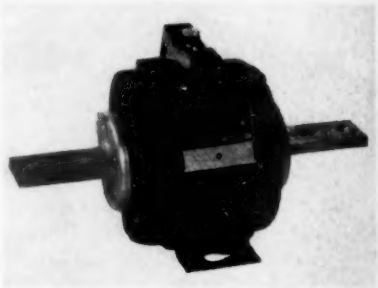
Ames No. 552 Dial Micrometer

Representatives in principal cities. B. C. AMES CO. *31 Ames Street, Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

For More Information Circle No. 168 on Inquiry Card—Page 17

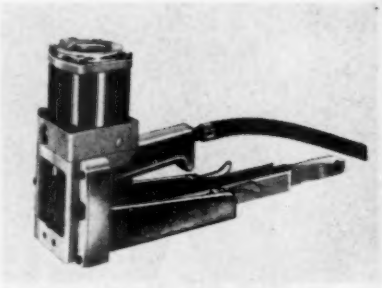
Improved Current Transformers



General Electric Co., Instrument Department, Schenectady 5, N.Y., announces that it has added three new features to its type JKO-O 600 v, indoor-outdoor, butyl-molded, current transformers. (1) The accuracy of the 200 amp-rated model has been increased. It now meets 0.3 B-0.1 and 0.3 B-0.2 accuracy, the same as the three other current ratings. (2) The 600 and 800 amp models have been equipped with a larger 27/16″ diam window, permitting use of larger primary cable. (3) A primary bar can be inserted in the transformer window. The transformers with the primary bars can be used interchangeably with other 600 v current transformers.

Circle No. 48 on Inquiry Card—Page 17

Stapler Won't Damage Contents in Closing Cartons



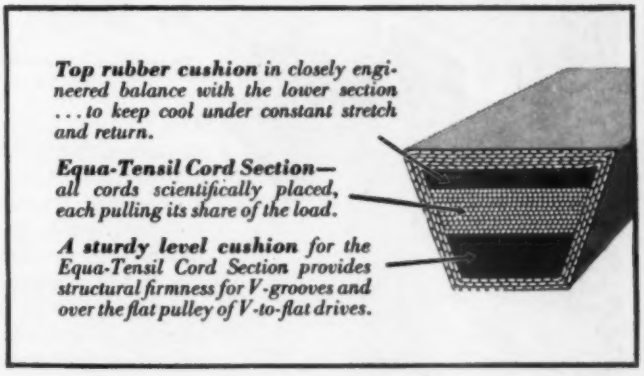
An air-operated portable stapler features a radically new two-cycle air motor. It weighs only 8 lb 12 oz, due to elimination of heavy materials formerly used. The design of the motor eliminates need for a return cycle air valve and prevents the machine-gun effect of continuous cycling. The stapler is equipped with a retractable anvil stapling head with two pivoting anvils that penetrate the carton to provide a perfect clinching base for the entering staple. Adjustable penetration control of both anvil and staple prevents damage to fragile contents of cartons being closed. Stapler operates on 50 lb air pressure. Manufacturer is International Staple & Machine Co., 809 East Herrin St., Herrin, Ill.

Circle No. 49 on Inquiry Card—Page 17

Handles MORE Horsepower... the new U. S. ROYAL SUPER-SERVICE BELT

Meet the *toughest* V-belt in the "U. S." Line. Delivering 40% more horsepower than standard belts, it also absorbs greater shock loads. Ideal where space is limited or where you want to decrease the number of belts required in order to use stock sheaves.

U.S. Royal® Super-Service is a "natural" for troublesome drives, especially heavy shock-load drives. High tensile strength, minimum stretch. All standard multiple sizes. Order from your distributor, or call any of United States Rubber Company's 25 District Sales Offices or write to address below.


***Top rubber cushion** in closely engineered balance with the lower section ... to keep cool under constant stretch and return.*
***Equa-Tensil Cord Section**— all cords scientifically placed, each pulling its share of the load.*
***A sturdy level cushion** for the Equa-Tensil Cord Section provides structural firmness for V-grooves and over the flat pulley of V-to-flat drives.*

A COMPLETE DRIVE SERVICE

MULTIPLE V-BELTS • F. H. P. V-BELTS • SHEAVES
FLAT BELTS AND BELTING • SPECIAL PURPOSE BELTS

"U. S." Research perfects it.
"U. S." Production builds it.
U. S. Industry depends on it.

US RUBBER

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

For More Information Circle No. 169 on Inquiry Card—Page 17

A GOOD WIPER FITS THE JOB

A good industrial wiper should *fit the job*. Herein lies the superiority of the sterilized specification wiping cloth as a factory tool. Because of the almost endless variety of textile fabrics available, it is possible to find one particular grade most efficient for a given purpose. SIA specifications do of course recognize the value of some uniformity and set up minimum requirements covering sterilization, dimension, weight and absorbency. But this uniformity is not gained at the sacrifice of *versatility*.

In selecting the particular grade best suited to your needs, it is not necessary to use a "trial and error" method. Institute members are specialists whose function it is to analyze the wiping problem in your plant and to recommend a wiper to meet your individual requirements.

Consult your Institute Supplier. Demand the Institute label on every bale or carton or the Institute affidavit with every invoice!

The Sanitary Institute of America has a membership of over one hundred leading industrial wiping cloth processors in twenty-seven of the United States. This advertisement is sponsored by the members listed here.

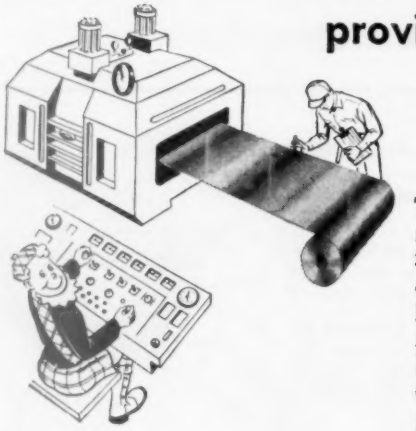
ATLANTA, GA.:
Rittenbaum Bros., 691-701 Houston St., N.E.
BROOKLYN, N. Y.:
Delia Waste Products Corp., 1625 Dean St. (13)
Horton Wiping Materials Co., 96 N. 10th St. (11)
CHICAGO, ILL.:
American Sanitary Rag Co., 336 W. 37th St. (9)
Chicago Sanitary Rag Co., 2137 S. Loomis St. (8)
DETROIT, MICH.:
Ace Wiping Cloth Co., 7355 Bryden Ave. (10)
Consumers Paper Co., 5170 Vermont Ave. (8)
PITTSBURGH, PA.:
Armstrong Sanitary Wipers Co., 1233 Spring Garden Ave., N.S. (12)
Scheinman-Neaman Co., 1024 Vickroy St. (19)
ROMEO, MICH.:
The W. Rumsey Co.

For prices and samples, write any member. For Institute specifications, write any member or The Sanitary Institute of America, 105 W. Monroe St., Chicago 3, Ill.

THE SANITARY INSTITUTE of AMERICA

For More Information Circle No. 170 on Inquiry Card—Page 17

MicroRold® Stainless Steel "Thinness Control"



provides strip *Quality* in SHEET *Sizes*

Remarkable uniformity of gauge in MicroRold Stainless Sheets up to 36" wide.

The "Thinness Control" used in the manufacture of light gauge MicroRold Stainless Sheets assures you of the *same* dimensional accuracy as in strip stainless. Specified gauge thicknesses may be rolled in sheet sizes with tolerances as low as 3% average (plus or minus) as compared to the A.I.S.I. allowable of plus or minus 10%. This results not only in weight savings but also in fabricating economies.

Regular use of MicroRold Sheet can give you more stainless area per ton or the equivalent area with lesser weight.

MicroRold Stainless Steel Sheets are available up to 36" wide and in gauges from .005 in commercial grades, finishes and temper.

Ask your steel warehouse distributor for MicroRold with "Thinness Control"

Washington Steel *Corporation*

Washington, Pennsylvania

For More Information Circle No. 171 on Inquiry Card—Page 17

Bonded Disc-Wheels Stand Harsh Dressing Action

Bay State Abrasive Products Co., Westboro, Mass., states that its resinoid bonded disc-wheels have outstanding performance in fast, deep cutting action. They withstand heavy pressures and harsh dressing action under high power. Their resinoid bond construction and multi-layer reinforcement of fibre glass along with specially treated nylon mesh give them strength to stand heavy duty grinding. They are available in a range of grades which allows a choice of hardness to meet requirements of various jobs.

Circle No. 50 on Inquiry Card—Page 17

Welder With Diverse Uses

A machine, available in 300, 400 and 500 amp, NEMA rated sizes, can be used for a wide range of a-c welding production jobs. It has a free circuit reactor control of welding current, separate from the main transformer, which can be adjusted continuously through a wide range of currents. The control is also sensitive to a wide range of welding conditions and highly responsive to changing arc conditions. The machines are equally adaptable to sheet steel or heavy plate. They can be procured from The Lincoln Electric Co., Cleveland 17, Ohio.

Circle No. 51 on Inquiry Card—Page 17

"For the toughest lubricating jobs...UNOBA!"

Jack Dressen, superintendent of maintenance,
Soulé Steel Company, San Francisco, California

"Here at Soulé Steel Company we specify Union's UNOBA grease for the *toughest* lubricating jobs around our plant.

"This machine which we developed, for example, bends heavy steel reinforcing rods in the twinkling of an eye. You can readily imagine the shock and loads imposed on bearings in the power train between the five H.P. motor and the table which turns at 16 R.P.M., exerting the 750 foot-pounds necessary to bend 1½"-diameter steel.

"Yet in six years of constant service this machine has never required a bearing replacement...much of the credit must go to Union's UNOBA which we've always used to lubricate these vital bearings."

Next time you make out a purchase order for industrial grease, we suggest that you, too, specify one that can *really take it*—Union's barium-lithium base UNOBA. Proved by more than three years of field testing, UNOBA is the finest multi-purpose grease you can purchase at any price, anywhere. Available *now* from your nearby Union Oil representative.

76 UNION OIL COMPANY
OF CALIFORNIA

Los Angeles: *Union Oil Bldg.* • **New York:** *45 Rockefeller Plaza* • **Chicago:** *1612 Bankers Bldg.* • **New Orleans:** *644 National Bank of Commerce Bldg.* • **Atlanta:** *401 Atlanta National Bldg.* • **Kansas City, Mo.:** *921 Rialto Bldg.*

For More Information Circle No. 172 on Inquiry Card—Page 17

YOUR
DEPENDABLE
SOURCE FOR
QUALITY
NAME PLATES
AT THE
RIGHT PRICE

Chicago Thrift-Etching Corporation
CHICAGO, ILLINOIS

Our experience, skilled craftsmanship plus the latest and best equipment enable us to provide standout identification of your products *at the right price.* You can depend on us for plates that reflect the quality of your products.

GET OUR QUOTATION Send a rough sketch, blueprint or sample, with specifications, for quotation—without obligation to you. Or write us fully about your requirements in name plates, instruction plates, dials, panels, scales, etc. **Write for free book,** "Etched or Lithographed Metal Products of Quality," containing full color examples.

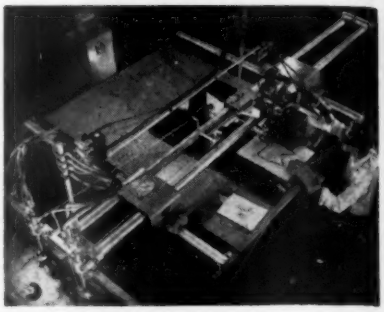
CHICAGO THRIFT-ETCHING CORPORATION
1555 NORTH SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. C

Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Coin Banks • Lithographed or Screened Plastic Name Plates or Dials • Aluminum Anodizing by the Alumilite Process.

SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

For More Information Circle No. 173 on Inquiry Card—Page 17

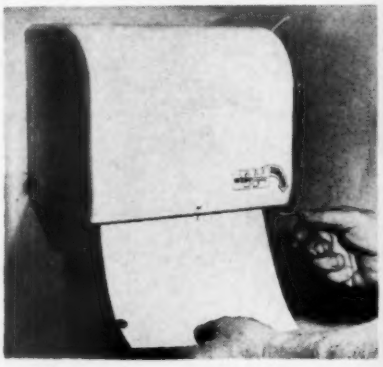
Cutting Machine With Four Torch Capacity



Air Reduction Sales Co., 60 East 42nd St., New York 17, N.Y., is introducing a new gas shape-cutting machine equipped with four oxy-acetylene torches. The torches may be arranged in a wide variety of positions—two on each end of the machine or four on one end, either mounted transverse or parallel to the cross rails—thereby giving the machine complete versatility. The cutting range of the machine when equipped with one tracing table is 48″ wide by 51″ long. Four 48″ diam circles can be cut simultaneously at each end of the machine. Cutting length can be extended indefinitely by addition of extra tracing tables.

Circle No. 52 on Inquiry Card—Page 17

Reducing Paper Towel Expense 40%



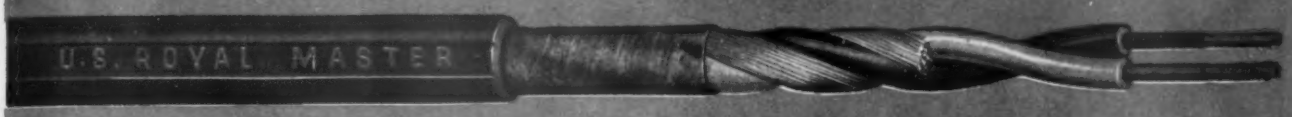
A crank-operated paper towel dispenser uses molded nylon gears in a simplified feed-mechanism that requires no timing device. The manufacturer, West Disinfecting Co., Long Island City, N.Y., claims that this dispenser can reduce paper towel expense by as much as 40% in many cases and can save as much as 75% on reloading and servicing time. The dispenser also cuts down on space requirements for storage. Each compact roll contains the equivalent of more than four packs of standard interfolding paper towels and occupies only 60% of the space normally used.

Circle No. 53 on Inquiry Card—Page 17

MASTER portable cord *outlasts all others!*

Comparative tests show U. S. Royal Master gives $1.88 in value for every $1.00 spent — almost *twice* the service value of the average of other molded cords!

LOOK FOR THE NAME — U. S. ROYAL MASTER



Two years ago, "U. S." engineers began a *complete reexamination* of portable cord construction, service life, and the causes of cord failure.

Over 10,000 tests were made. More than a thousand cords of all leading makes, including our own famous U. S. Royal Cord, were analyzed, tested, and compared.

Every life factor was considered and carefully evaluated, alone and in its relation to overall cord performance and service life.

Backed by 64 years of experience in the manufacture of electrical wire and cable, U. S. Rubber engineers then translated their findings into an entirely new portable cord, designed to surpass any other previously made.

Extensive tests, both in the laboratory and in outside plant installations have proved this new portable cord startlingly superior in every respect!

New U. S. Royal Master is unquestionably the finest cord you can buy!

From every standpoint, as the charts at left illustrate, new U. S. Royal Master is a finer, more durable cord—actually gives 88% longer life than the average of competitive molded cords—far longer than *any* other cord—surpassing even a hypothetical cord incorporating the best features of all those tested!

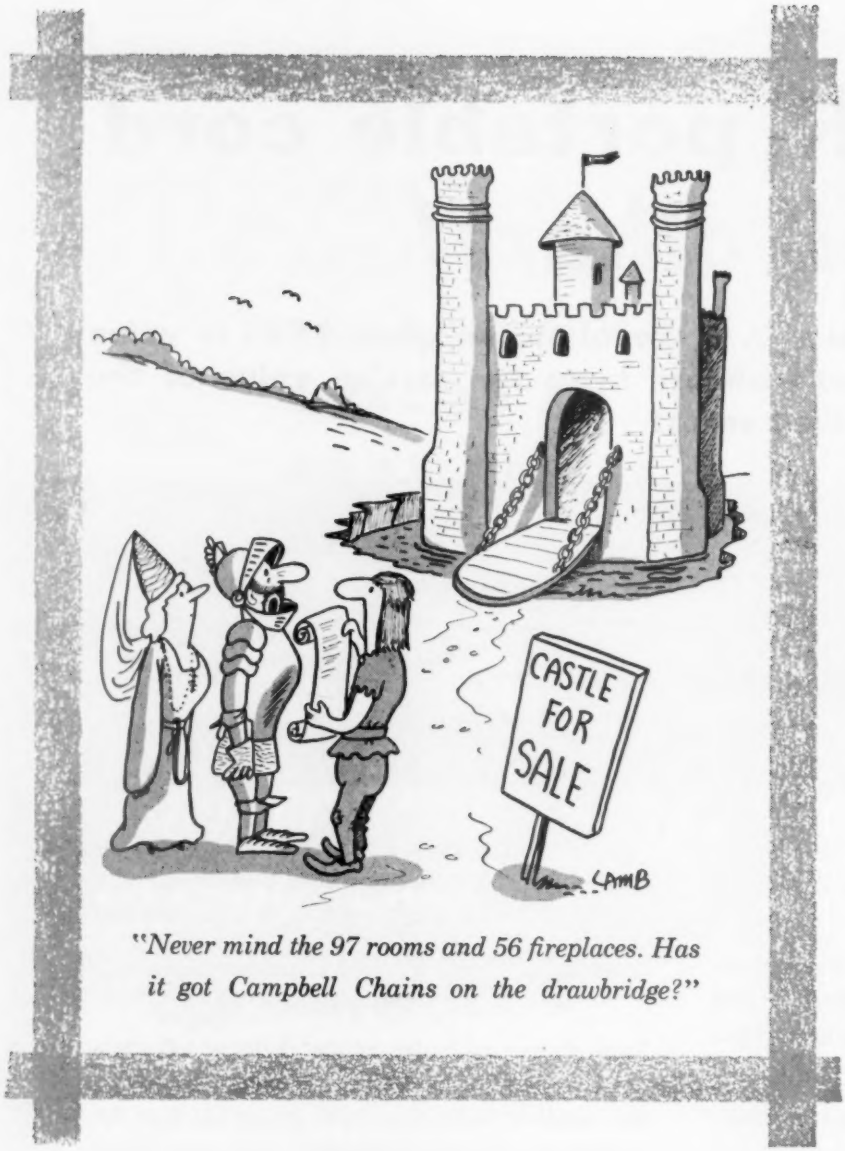
Far greater value, too! In spite of almost doubled service life, this great new cord is in the same price category as other molded cords—giving you $1.88 in cord value for every cord $1.00!

Prove to yourself the outstanding superiority of new U. S. Royal Master Portable Cord — in both service life *and* economy! Get in touch with your "U. S." distributor today!

Approved by Underwriters' Laboratories, Inc.

RUBBER COMPANY

ROCKEFELLER CENTER, NEW YORK 20, N. Y.



"Never mind the 97 rooms and 56 fireplaces. Has it got Campbell Chains on the drawbridge?"

Never take chain for granted. Wherever you use it—for maintenance . . . on the production line . . . or on original equipment, be sure you specify CAMPBELL CHAIN.

Campbell makes safe, dependable chain in sizes and grades to meet every requirement. Each link is inspected individually to guarantee long lasting service. Get complete information from your local distributor or mill supply house. If your chain problem is unusual, write direct.

CAMPBELL CHAIN *Company*

CAMPBELL CHAIN

Main Office, York, Pa. • West Burlington, Iowa
Portland, Oregon • Sacramento, California

Makers of Famous CAMPBELL *Lug-Reinforced* TIRE CHAINS

For More Information Circle No. 176 on Inquiry Card—Page 17

Hydraulic Carton Clamp Permits Palletless Handling

Fork trucks can now handle a variety of products, ranging from solid cartoned merchandise to egg crates and other fragile items without the use of pallets. A hydraulic clamp developed by the Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio, is responsible. In addition to eliminating pallets, the clamp enables storage space to be used more effectively. Investment in costly pallets and skids will no longer present a financial problem. In addition to the clamping feature, a side-shifter can be provided to save time and permit accurate spotting of loads.

Circle No. 54 on Inquiry Card—Page 17

Same Switch Interlocks, Non-Interlocks

A switch, said to be ideal for motor control, service entrance or any job requiring a standard duty operating switch is in production by Frank Adam Electric Co., P. O. Box 357, Main Post Office, St. Louis 3, Mo. It incorporates quick-make and quick break operation with interlock on full opening, hinged cover and quick conversion to non-interlocking by manually shifting a single mechanism inside the door. There is positive "on" and "off" indication in cover. The switch is available in following capacities: 30 to 200 amp, 250 and 600 v, a-c or d-c, 2, 3, and 4 poles single throw.

Circle No. 55 on Inquiry Card—Page 17

Circle No. 177 on Inquiry Card—Page 17

on Inquiry Card—Page 17→

TAPER-LOCK

A PATENTED PRODUCT OF DODGE

-OFF THE SHELF

NO REBORING!
NO KEYSEATING!
NO MACHINING!

Ready for the shaft, with no costly, time-consuming operations to make them fit. That's the big news about Dodge Taper-Lock Sprockets. Taper-Lock grips the shaft with the firmness of a shrunk-on fit, yet comes off easily. Bushings may be re-used. They come in sizes to meet most every application.

Taper-Lock Sprockets are available from Distributors' stocks in a complete range of B-type steel sprockets—½" through 2" pitch. Dodge quality Roller Chain is packaged in 10-foot lengths—also available in 50-foot and 100-foot reels. Save time—save money—keep production rolling—get Dodge Taper-Lock Sprockets and Roller Chain from your Dodge Distributor.

DODGE MANUFACTURING CORPORATION, 1300 Union St., Mishawaka, Ind.

CALL THE TRANSMISSIONEER, your local Dodge Distributor, for valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.

THERE'S ONLY ONE TAPER-LOCK, THE BUSHING THAT MOUNTS FLUSH!

Standardize, economize with Taper-Lock, the bushing that is interchangeable in Dodge sprockets, sheaves, couplings and conveyor pulleys. *More than 2,000,000 in use!*

DODGE

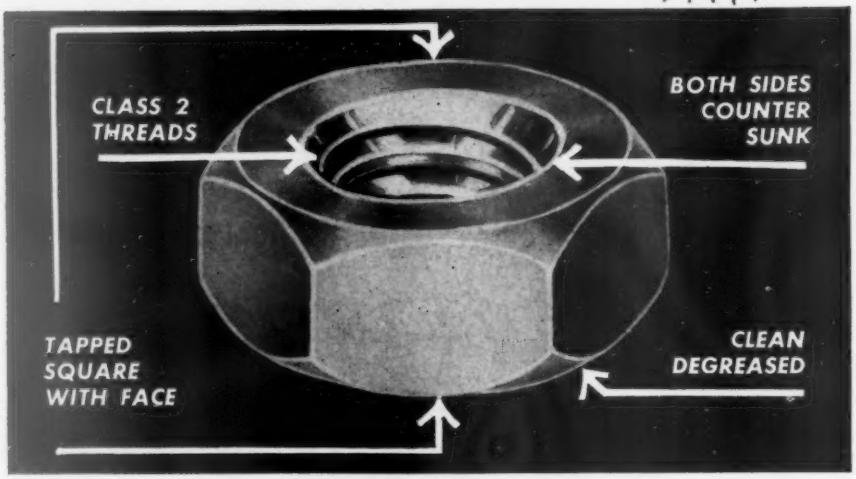
of Mishawaka, Ind.

For More Information Circle No. 178 on Inquiry Card—Page 17

Now Aluminum Nut Users are Getting Lower Prices and Highest Precision!

"Fischer Turned" ALUMINUM NUTS

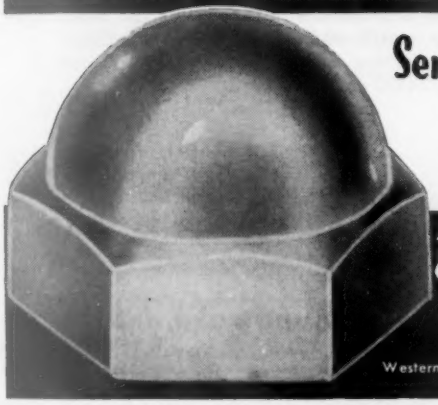
"Turned Products Since 1905"



PRICE and PRECISION You have been Looking for!

Forty-nine years of nut manufacturing gives us the specialized know-how and exclusive technique necessary to give you the finest aluminum nut you have ever bought at any price. Let us show you the cost-cutting, assembly-speeding benefits you buy when you specify and order "FISCHER TURNED" ALUMINUM NUTS.

HEXAGON ALUMINUM CAP NUTS,
HEXAGON ALUMINUM OPEN END CAP NUTS, AND
HEXAGON ALUMINUM MACHINE SCREW NUTS
Sizes range from 4-36 to 3/8-24



Send for Samples

of the sizes you need. You'll find that for price, precision, and delivery you can't beat FISCHER!

Fischer SPECIAL MFG. CO.
446 MORGAN ST.
CINCINNATI 6, OHIO
Western Union—TFI Bell System Teletypewriter CI-448-U
Telephone WOodburn 1280

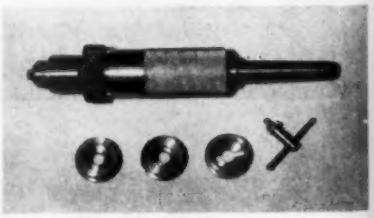
For More Information Circle No. 179 on Inquiry Card—Page 17

Store Flammable Liquids Safely

Designed in accordance with fire protection codes, a storage cabinet affords safe overnight or week-end storage within the plant for flammable liquid cans. When quantities of liquids used are small, it may eliminate need of building the standard flammable liquid storage room with fire resistant walls, raised door sill and fire door. The cabinet is of steel construction throughout with sturdy riveted and spot welded double walls of 18 gage terne plate and an air space of 1½" between all walls. Doors are equipped with a spark-proof lock. Storage for 15 gal. is provided. The manufacturer is The Protectoseal Co., 1920 Western Ave., Chicago 8, Ill.

Circle No. 56 on Inquiry Card—Page 17

Thread-Quill Dispenses with Many Secondary Operations



D. S. C. Machine Co., 29 Bertel Rd., Mt. Vernon, N. Y., says that the problems of threading, tapping and drilling small precision threads on lathes, turret lathes and screw machine have been almost eliminated by the addition of a new tool, a thread-quill. It makes it possible to control the forward travel of the drill, tap or die and "feel" any delay in the cutting action. A pressure release allows the tool and sleeve to spin with the work piece. When bed turrets on screw machines or turret lathes fail to locate in the same position, it is now possible to float tools, in place of the fixed position method. The thread-quill and its floating action compensates for misalignment.

Circle No. 57 on Inquiry Card—Page 17

Here's evidence of the superior flashback* resistance built into PUROX TRADE-MARK BLOWPIPES

This is an actual excerpt from a recent Salesman's Report:

"... The superintendent wanted to know what the PUROX *W-202 blowpipe's characteristics were concerning flashback. I told him to go ahead and try it. He then lit a standard welding head and placed it against a block of wood six inches square. It bit its way into the block two inches deep before the tip of the welding head began to melt off. BUT ALL THE WHILE IT KEPT BURNING WITH NO FLASHBACK...."*

We don't guarantee that every blowpipe can be maltreated this way with the same results. But that's the simple truth about the flame stability and flashback resistance of the PUROX W-202 Blowpipe. Your present welding and heating work may not demand the limits of its outstanding performance. Still the reserve that's there—if and when you need it—is your continued assurance of steady, dependable operation and your safeguard against repair bills.

See for yourself the many additional features that put the PUROX W-202 Blowpipe so far ahead of the field in economy, ease of operation, and low cost maintenance. Enjoy tomorrow's standards today. Ask your LINDE jobber for a demonstration. Or write to LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd Street, New York, N. Y. In Canada: Dominion Oxygen Company, Division of Union Carbide Canada Limited, Toronto.

* *"A flashback occurs when the flame disappears from the end of the tip and the gases burn within the torch or beyond the torch in the hose, usually with a shrill, hissing sound."*

—Definition from THE WELDING ENCYCLOPEDIA, *Thirteenth Edition.*

Get it from your LINDE jobber

The terms "Linde" and "Purox" are registered trade-marks of Union Carbide and Carbon Corporation.

For More Information Circle No. 180 on Inquiry Card—Page 17

If ONE Cleaner could do EVERYTHING...

. . . how much easier your purchasing would be! Unfortunately, no detergent is quite that versatile. For all-round cleaning results, it usually takes a number of specialized detergents—and where costs are to be minimized, the technical guidance of a cleaning specialist—like your Oakite Technical Service Representative—can be most helpful. Here are three good reasons why personalized tank-side service by your Oakite Representative will bring you the best results at lowest cost:

A complete analysis of your cleaning problems

Your Oakite Representative has the technical background and practical "know-how" to cope with your most complex cleaning difficulties. He is prepared to make an intelligent survey of your operation, provide you with pertinent technical data, prepare drawings and blueprints when necessary, and then recommend a practical money-saving solution to your cleaning problem.

A complete line of cleaners for your particular needs

Your Oakite Representative has over 100 cleaning compounds from which to choose when he submits recommendations. The Oakite line of industrial cleaners is ever-expanding to make your cleaning operations more effective . . . more economical.

A complete follow-up to assure you results

Your Oakite Representative strives for completely successful results. He stays with your problem from start to finish; installs testing and control devices to check standardization; instructs your personnel when new methods might prove more effective. If technical difficulties crop up, the facilities of the Oakite Laboratories are always freely available for prompt analysis and expert advice.

Your Oakite Representative is as near to you as your telephone. Call him today. Oakite Products, Inc., 54 Rector St., New York 6, New York. No obligation.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

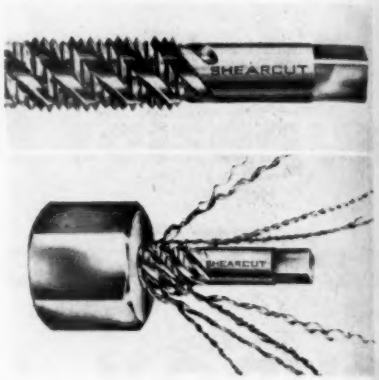
REG. U.S. PAT. OFF.

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

For More Information Circle No. 181 on Inquiry Card—Page 17

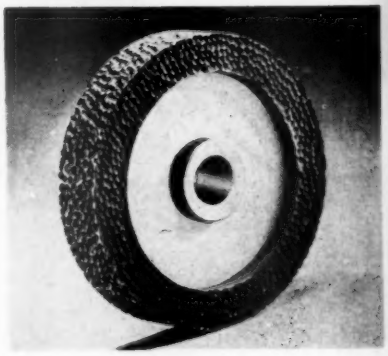
Tapping Costs Cut 25-75%



Thread broaches, designed to operate at speeds from three to six times the normal speeds used for conventional taps, are claimed to cut tapping time and labor costs from 25% to 75% because of the higher rotational speeds that may be used. Made from high speed steel, they are available in all standard sizes and pitches. They require less than half the power used for ordinary taps and have an exceptionally long life according to the manufacturer, Shearcut Tool Co., 7045 Darby Ave., Reseda, Calif.

Circle No. 58 on Inquiry Card—Page 17

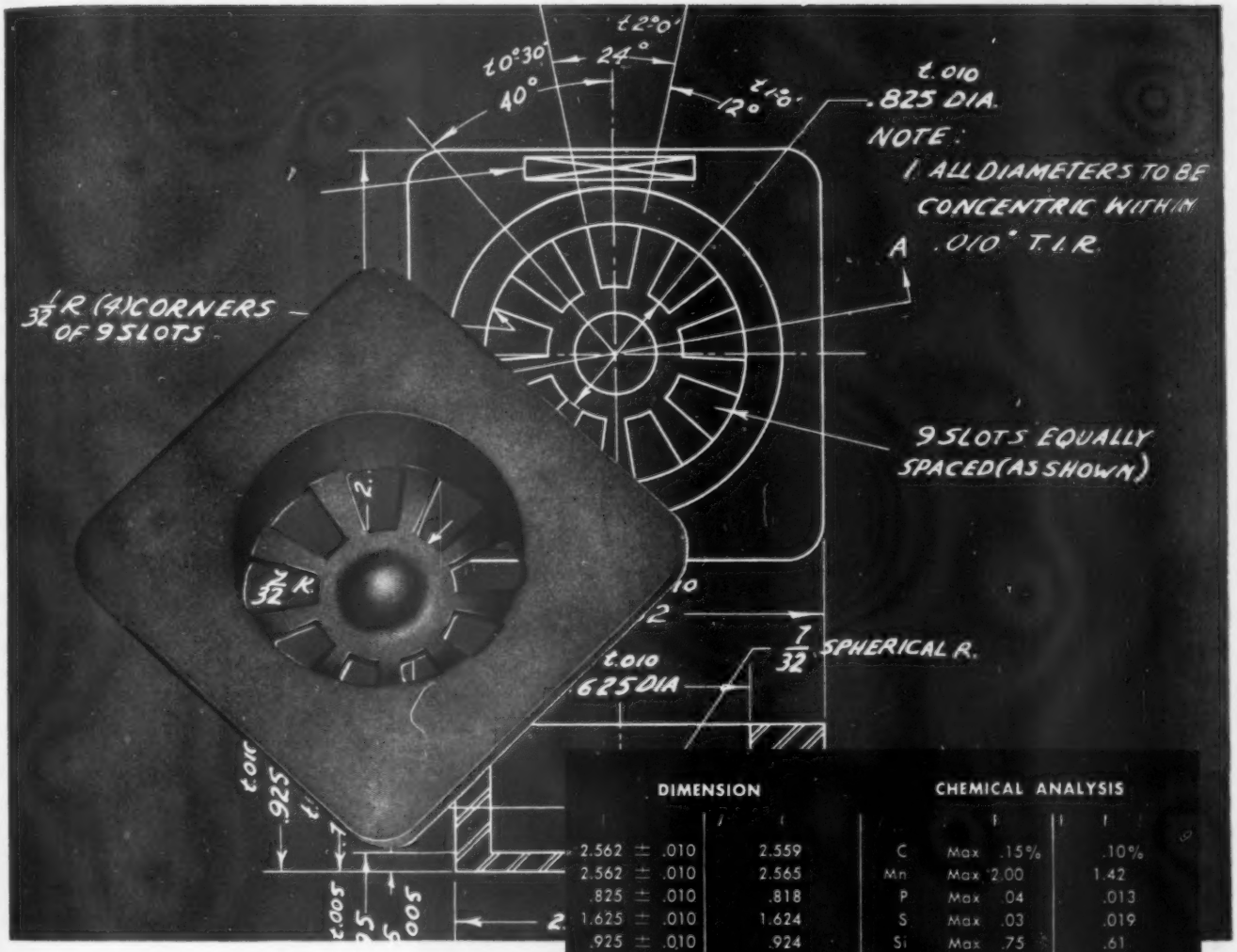
"Non-Clogging" Grinding Wheels Cut Out Dressing



Almost every manufacturer or machine shop would welcome an end to time lost in the dressing of emery and grinding wheels used on non-ferrous metals. An answer to all these problems is claimed by Schmidgall Mfg. Co., 307 Cass St., Peoria 2, Ill. It has developed cutting wheels for all non-ferrous metals that do away with clogging and thus eliminate wheel dressing. They are made of steel with thousands of small pits machined in the surface.

Circle No. 59 on Inquiry Card—Page 17

QUICK—CONVENIENT
Use the Inquiry Card on Page 17 for additional information on any product



DIMENSION		CHEMICAL ANALYSIS		
2.562 ± .010	2.559	C	Max .15%	.10%
2.562 ± .010	2.565	Mn	Max 2.00	1.42
.825 ± .010	.818	P	Max .04	.013
1.625 ± .010	1.624	S	Max .03	.019
.925 ± .010	.924	Si	Max .75	.61
.700 ± .010	.698	Ni	12.00-14.00	13.00
.105 ± .005	.109	Cr	16.00-18.00	17.70
2.050 ± .010	2.058	Cu	Max .50	.07
.295 ± .005	.293	Mo	1.50-2.25	1.96

Rely on

Crucible ACCUMET investment castings

for dimensional and metallurgical accuracy . . .

This intricately shaped aircraft instrument part had to be held to rigid specifications both in size and in chemical analysis of the steel.

That's why Crucible ACCUMET® precision castings were used. For Crucible's *lost wax* method of casting, and its long experience as the country's leading producer of fine special purpose steels, combine to bring you accurate castings of the highest quality. But the two tables shown below actually tell the story better than words can. They show how closely ACCUMET castings are held to original specifications.

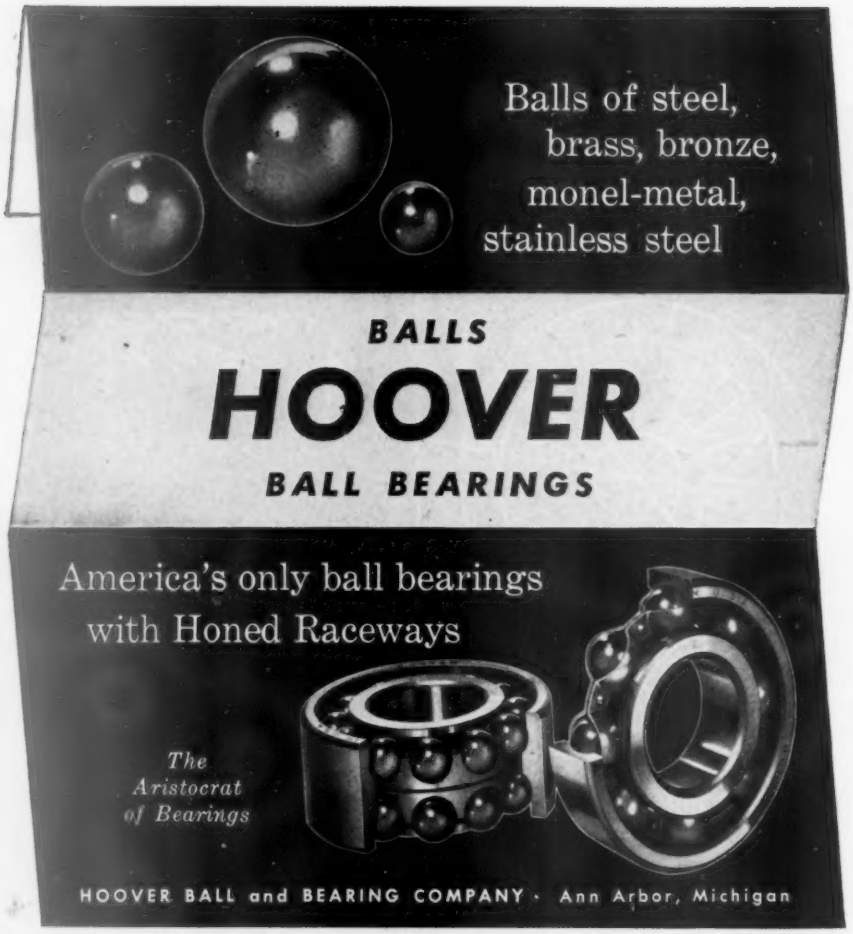
The next time you have a job where quality and close tolerances are needed, be sure to investigate the advantages of ACCUMET precision castings – *call Crucible.*

CRUCIBLE first name in special purpose steels

54 *years of* Fine *steelmaking* **ACCUMET INVESTMENT CASTINGS**

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

For More Information Circle No. 182 on Inquiry Card—Page 17



For More Information Circle No. 183 on Inquiry Card—Page 17

WISCONSIN-POWERED
"In-Plant" Fire Truck
Proves its "Put-Out Power"

Designed primarily for "in-plant" factory and warehouse fire protection, this versatile, highly maneuverable, fully equipped Kalamazoo Fire Truck, made by Kalamazoo Mfg. Co., Kalamazoo, Mich., demonstrates its efficiency in extinguishing an "out-plant" oil and high octane fire.

Extremely compact design enables this fire truck to negotiate standard doors, factory and warehouse aisles, moving at speeds up to 15 miles per hour.

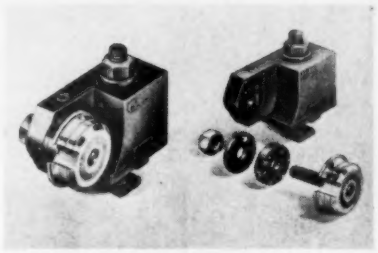
Recognizing the fact that vital emergency service requires the utmost dependability from the power unit, the builders stake their reputation on the quick-starting ability, fast get-away and operating efficiency of the Wisconsin Model TF 2-cylinder Heavy-Duty Air-Cooled Engine.

You can't do better than specify "Wisconsin Power" for *your* equipment, whatever its nature. Available in a complete power range from 3 to 36 hp. Write for descriptive Bulletin S-164.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

For More Information Circle No. 184 on Inquiry Card—Page 17

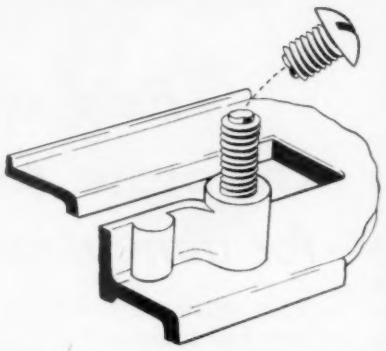
Tool Post Cuts Form Tool Costs



An adaptable cross-slide tool post which enables the user to employ smaller, less costly, circular form tools on larger automatic machines is on the market. The new fixture eliminates the conventional hook clamp which holds the form tool. Pin holes are not required as a special adapter ring is provided. The special screw adjustment provides more positive and accurate setting of the cutting edge while at the same time permitting greater clearance. As a result, circular form tools for #00 machines may be used on #0 or #2 machines. This reduces tool expense on short runs of large stock by as much as one-third. American Cam Co., Hartford 1, Conn. make the device.

Circle No. 60 on Inquiry Card—Page 17

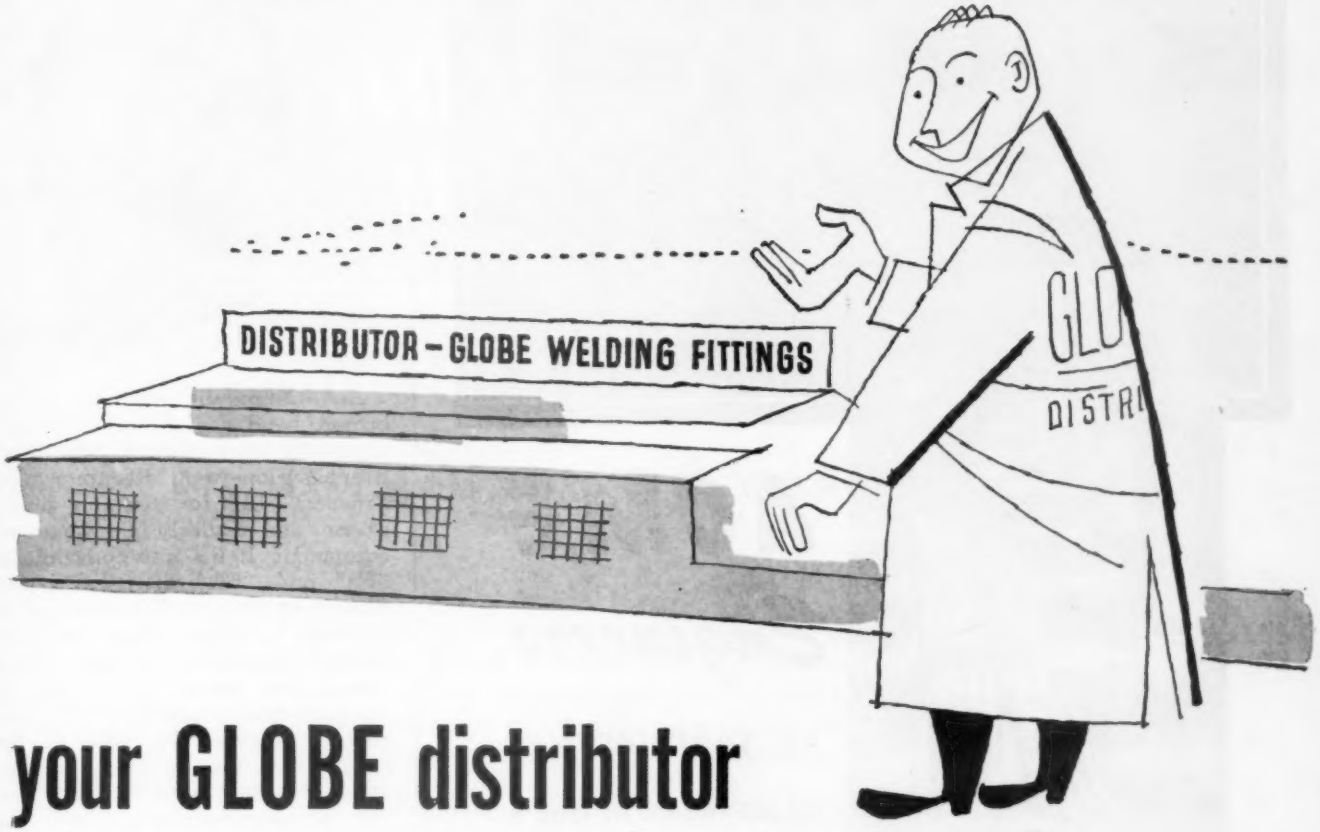
Break-Off Screw "Studs" in Die Casting Cored Holes



A specially engineered break-off, thread-cutting screw has been developed for forming a stud in cored hole of die castings. The screw, which can be hopper-fed from power screw drivers, is driven into the untapped cored hole until it "bottoms." Torque is then increased and the upper portion of the screw, including the head twists off at a "necked down" section of the screw. This leaves a protruding stud on which a nut can be easily threaded. Screw was developed by Shakeproof Div., Illinois Tool Works, 2501 N. Keeler Ave., Chicago 39, Ill.

Circle No. 61 on Inquiry Card—Page 17

When you need welding fittings...



your GLOBE distributor can be your warehouse

Among the many advantages you get by dealing with your Globe Welding Fittings distributor is the fact that you can hold inventory to a sensible minimum and conserve stockroom space.

That's because he carries a wide range of types and sizes of welding fittings in stock. Thus, your welding fittings supply is no farther away than the nearest phone. At the same time you can simplify much of the paperwork usually required for extensive inventory control, purchasing and bookkeeping.

Call your Globe distributor now — get the facts on the many ways he can serve you . . . help you save time and money.

GLOBE STEEL TUBES Co., Milwaukee 46, Wis.

For the name of your Globe distributor, call any of these District Offices.

Chicago • Cleveland • Denver • Detroit • Glendale, Calif. • Houston
New York • Philadelphia • St. Louis • San Francisco

Only Globe — among manufacturers of seamless Welding Fittings— produces its own seamless tubes. Only Globe offers you precision-processed fittings through every step of production — from billet to tube to fitting.

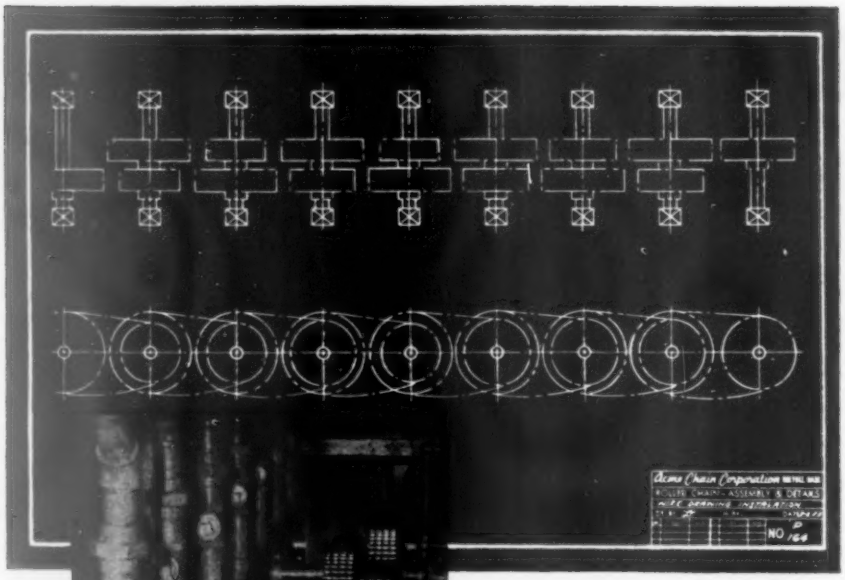
GLOBE
PRECISION PROCESS

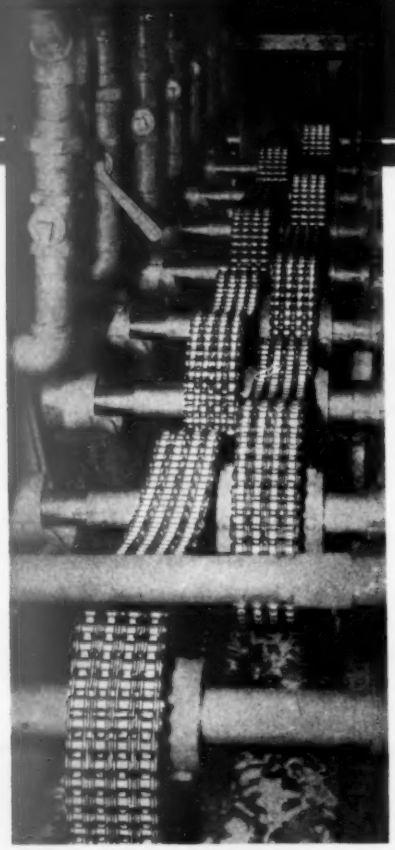
SEAMLESS WELDING FITTINGS

GLOBE TUBES

Producers of Globe seamless stainless steel tubes— Gloweld welded stainless steel tubes — alloy — carbon — seamless steel tubes — Globeiron (high-purity ingot iron) seamless tubes — Globe Welding Fittings.

For More Information Circle No. 185 on Inquiry Card—Page 17





ACME Engineers

at your service!

ACME wants to lend a hand . . . an engineering service by experienced men who know roller chain.

Whatever your problem; sprocket, ratio, chain impact, tension, drive speed or increased power transmission, don't hesitate to call in a skilled helping hand from ACME CHAIN.

Write or phone Holyoke 2-9458.

RUGGED PRECISION CHAIN for EVERY NEED

Write Dept. 8Q for new illustrated 76 page catalog on use and application of roller chains and sprockets.

Acme Chain Corporation
HOLYOKE
MASSACHUSETTS

For More Information Circle No. 186 on Inquiry Card—Page 17

Push-Button Hand Switch

An aluminum-covered push-button hand switch has been designed by Micro Switch, Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill., for use on punch presses and similarly hand-operated equipment. It fits into conventional "FS" and "FD" electrical boxes. Switch is 2¼" in diameter and so provides a large target for easy manual operation. A snap-acting spring gives users a good "feel" of the push-button action. A neoprene gasket between the base of the switch and the mounting surface and a seal boot between the button and plunger mechanism seal the switching unit from oil and other foreign matter.

Circle No. 62 on Inquiry Card—Page 17

Tools Eliminate Costs of Soldering Connections

The costs of soldering electrical connections are eliminated by the use of tools now in production by the Wire-Wrap Division of Keller Tool Co., Grand Haven, Mich. Solderless wire-wrap connections made with appropriate terminal and wire sizes, and wrapped with this tool are said to be both mechanically and electrically equal to soldered connections. The wire-wrap tool is also capable of making wrap and solder connections. In this use the tool replaces the hand method of wrapping wire on the terminal, prior to soldering. Wrapping bits are available for handling 20-, 22-, or 24-gage wire on terminals with a maximum width of 1/16", 3/32" or 1/8".

Circle No. 63 on Inquiry Card—Page 17

USE INQUIRY CARD PAGE 17

PROMPT DELIVERY

on Monel® and nickel alloy forgings and castings

For prompt service on orders for nickel alloy castings and forgings . . . see Philadelphia Bronze & Brass. Our completely equipped facilities can give you quick delivery on pieces made to your exact specifications from cast and forged Monel, pure nickel, 70% copper-30% nickel and a variety of other high-nickel alloys, including forged "K"® Monel.

PB&B castings and forgings assure you the highest quality and uniformity —for these reasons:

The best materials are used. Castings are poured exclusively from virgin metals. Hammer forgings are made from certified materials purchased from International Nickel Company.

The most modern techniques, including new shell molding facilities, place at your service a variety of economical, efficient operations . . . all integrated under one responsibility from blueprints to finish machined products.

We can cast or forge any of the nickel alloy pieces in sizes up to 2000 pounds, in any of the standard alloys or in metals combined to your own specifications.

In addition to these alloys, we supply high conductivity copper, aluminum bronzes, Mallory welding alloys and titanium alloys in cast and forged form. **For a copy of our new catalog** on our facilities and technical characteristics of available alloys, write today to Philadelphia Bronze & Brass . . . or any of the field offices of P. R. Mallory & Co. Inc.

® *Registered Trade Mark—International Nickel Company*

PHILADELPHIA BRONZE & BRASS CORP.
22nd and Master Streets, Philadelphia 21, Pa.

—a subsidiary of

P. R. MALLORY & CO. Inc.
MALLORY

For More Information Circle No. 187 on Inquiry Card—Page 17

For a **Real Grip** *on things*

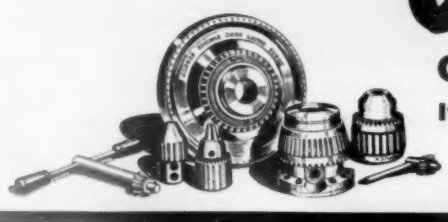
Try the Jacobs Ball Bearing Super Chuck. It's a heavy duty chuck for heavy duty drilling . . . a bear for grip and 100% more powerful than comparable plain bearing chucks.

Here's why. The ball thrust bearing rolls away friction between sleeve and nut. Steel jaws close smoothly with tremendous power. The Jacobs Ball Bearing Super Chuck grips harder, and more accurately than any other drill chuck made.

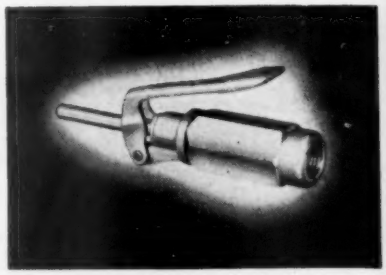
The Super Chuck and the complete line of Jacobs Chucks are stocked and sold by industrial distributors everywhere. See yours, or write Jacobs Mfg. Co., 1901 Jacobs Road, West Hartford 10, Conn. Ask for Catalog 100.

JACOBS AND YOUR LOCAL DISTRIBUTOR
are ready to deliver the chucks you need and the service you deserve.
first in chucks . . . first in service

Jacobs
CHUCKS
If it's a Jacobs it holds



General Purpose Air Gun



Designed for conditions where easily and fully controlled air pressure is needed, the heavy-duty air pressure gun has a specially engineered nozzle that provides a high volume air supply, yet at a low velocity. Therefore, the gun can be used for all cleaning jobs from blowing hard to dusting off. The standard type is adequate for all-around use in most shops and foundries. The air gun will not "blast" when cleaning around machines. Standard tips are available in any length up to 48" for special applications. Gun is manufactured by Milwaukee Air Gun Co., 2624 N. 56th St., Milwaukee, Wis.

Circle No. 64 on Inquiry Card—Page 17

Air Hoist Economizes on Repetitive Handlings

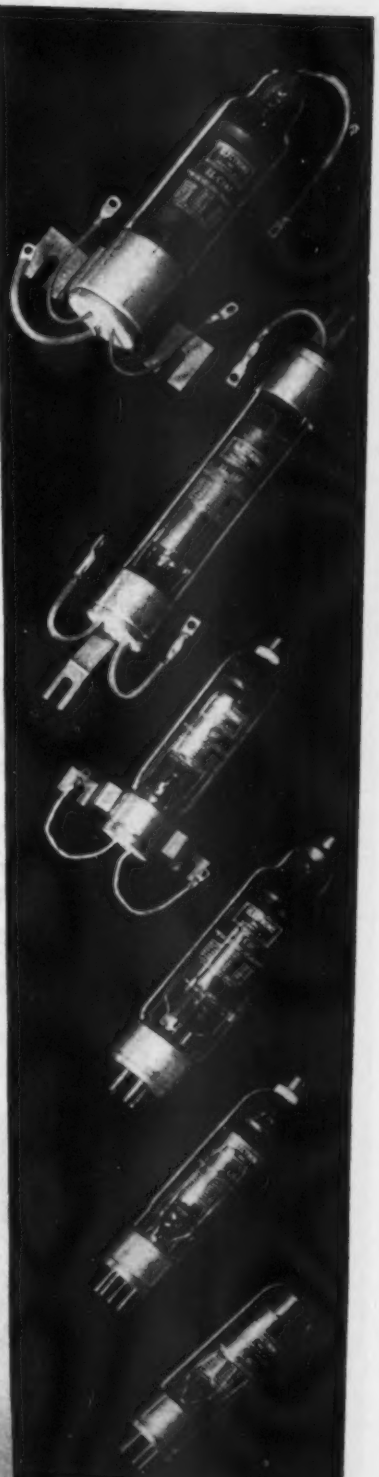
Keller Tool Co., Grand Haven, Mich., says that its air hoist with a 150 lb capacity for light operations is completely different in design. It saves time on repetitive handling operations in the bothersome 50 to 100 lb range that frequently ties up heavier hoisting equipment. Handy controls allow the operator to raise or lower the load and swing it into position with one hand, leaving the other hand free to control other parts or machinery. Full-range speed control permits loads to be raised or lowered at any rate from a slow creep to 40 fpm through a 9 ft lifting range.

Circle No. 65 on Inquiry Card—Page 17

For More Information Circle No. 188
←on Inquiry Card—Page 17

DISTRIBUTORS

ALABAMA	
Birmingham 1	Matthews Electric Supply Company, Inc.
ARKANSAS	
Little Rock	Southern Radio Supply
CALIFORNIA	
Los Angeles 7	RCA Victor Distributing Co.
Sacramento 14	E. M. Kemp Company
San Francisco 1	Leo J. Meyberg Company
COLORADO	
Denver	Federal Electric Center
CONNECTICUT	
Hartford 3	Hatry of Hartford
New Haven 13	Dale Electronic Distributors
DELAWARE	
Wilmington	Radio Electric Service Co.
DISTRICT OF COLUMBIA	
Washington 1	Electronic Wholesalers, Inc.
FLORIDA	
Miami	Thurow Distributors of Miami
Pensacola	Grice Radio & Electronic Supplies
Tampa	Thurow Distributors, Inc.
GEORGIA	
Atlanta 2	Graybar Electric Company
ILLINOIS	
Chicago 80	Allied Radio Corporation
Chicago 12	Walker-Jimieson, Inc.
Rockford	H & H Electronic Supply, Inc.
Rock Island	Tri-City Radio Supply, Inc.
INDIANA	
Fort Wayne	Warren Radio Company
Indianapolis 22	Phillip E. Graham Co. Inc.
IOWA	
Davenport	TCR Distributors, Inc.
KANSAS	
Wichita 1	Interstate Electronic Supply
LOUISIANA	
New Orleans 12	Radio Parts, Incorporated
MAINE	
Portland 3	Maine Electronic Supply Corporation
MARYLAND	
Baltimore 1	Radio Electric Service Co.
MASSACHUSETTS	
Boston 8	Radio Shack Corporation
Springfield 8	Specialty Manufacturing Co.
MICHIGAN	
Battle Creek	Electronic Supply Corp.
Cadillac	Electronic Supply Corp.
Detroit 1	Radio Specialties Company
Flint 3	Shand Radio Specialties
Grand Rapids	Warren Radio Company
Kalamazoo	Electronic Supply Corp.
Pontiac 16	Electronic Supply Company
MINNESOTA	
Minneapolis 3	Lew Bonn Company
MISSOURI	
Kansas City 8	Radiolab
St. Louis 1	Van Sickle Radio Company
NEW JERSEY	
Newark 4	Aaron Lippman & Company
Newark 5	Parr Electric Company, Inc.
NEW YORK	
Albany 4	Fort Orange Radio Dist. Co.
Binghamton	Federal Radio Sales & Supply
Buffalo 3	Radio Equipment Corp.
New York 3	E. B. Latham & Company
Rochester 4	Rochester Radio Supply Co.
Syracuse 3	Syracuse Radio Supply Co.
Utica 2	Vaeth Electric Company
NORTH CAROLINA	
Charlotte	Dixie Radio Supply Company
Winston-Salem	Dalton-Hege Radio Supply Co.
OHIO	
Cincinnati 10	Hughes-Peters, Incorporated
Cincinnati 10	United Radio, Incorporated
Cleveland 15	Radio & Electronic Parts Corp.
Columbus 15	Hughes-Peters, Incorporated
Dayton 4	SREPCO Incorporated
Lima	Warren Radio Company
Toledo 2	Warren Radio Company
Youngstown 3	Ross Radio Company
PENNSYLVANIA	
Allentown	Federated Purchaser, Inc.
Erie	Warren Radio, Incorporated
Philadelphia 7	Rumsey Electric Company
Pittsburgh 22	Cameradio Company
RHODE ISLAND	
Providence 8	Wm. Dandreta & Company
SOUTH CAROLINA	
Columbia	Dixie Radio Supply Company
Greenville	Dixie Radio Supply Company
TENNESSEE	
Nashville 4	Electra Distributing Company
Chattanooga 2	Curle Radio Supply Company
TEXAS	
Houston 1	Geophysical Supply Company
VIRGINIA	
Norfolk 10	Radio Supply Company
Richmond 21	Radio Supply Company
Roanoke	Radio Supply Company
Roanoke	Roanoke Electronic Supply, Inc.
WASHINGTON	
Seattle 44	Associated Industries
WEST VIRGINIA	
Parkersburg	Randle & Hornbrook
WISCONSIN	
Madison 3	Satterfield Electronics, Inc.
Milwaukee 3	Radio Parts Company, Inc.
CANADA	
Toronto 16	Burlec Sales Limited
EXPORT	
New York 3	E. B. Latham & Company



ELECTRONS, INCORPORATED

127 SUSSEX AVENUE

NEWARK 3, N. J.

Our industrial electronic tubes are in stock near you.

For More Information Circle No. 189 on Inquiry Card—Page 17

PAGE FENCE—Since 1883

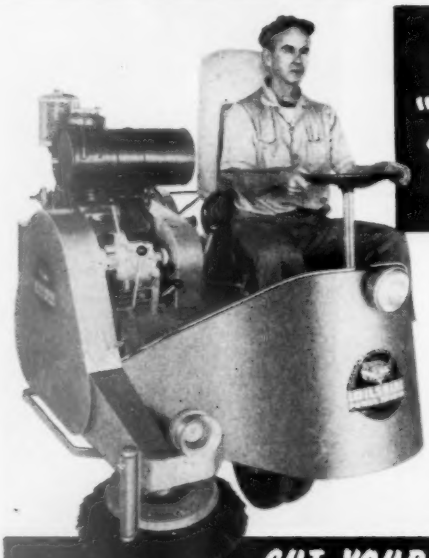
• AMERICA'S FIRST WIRE FENCE •

• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you...

Write to PAGE FENCE ASSOCIATION, Monessen, Pa., or look in Thomas' Register for listing of Page Chain Link Fence Distributors under "PAGE STEEL AND WIRE DIVISION," or see MacRae's Blue Book for listing under "FENCING, WIRE, LINK," or consult Sweet's Industrial Construction File.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

For More Information Circle No. 190 on Inquiry Card—Page 17



Wilshire "SUPER-SAFE" MULTIPURPOSE POWER SWEEPER

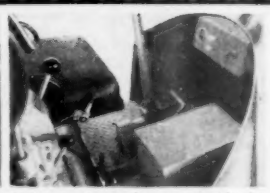
GREATER SAFETY • HIGHER EFFICIENCY
EASIER OPERATION
GREATER POWER • BIGGER VALUE

When Management asks for performance data and prices on Power Sweepers, you'll be the "fair-haired lad" when you suggest the WILSHIRE "Super-Safe" Multipurpose Sweeper... the safest, most efficient Power Sweeper ever built. Write today for specifications and performance data and the name of your nearest Wilshire Distributor.

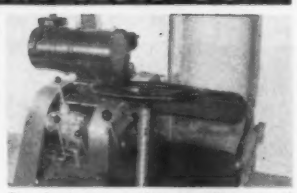
Write for illustrated brochure and name of your nearest Wilshire Distributor

CUT YOUR SWEEPING COSTS 80%

All control handles are at operator's right hand. All hazards to hands or clothes are completely eliminated as all moving parts are completely covered.



Instrument panel conveniently located on dash. Ignition has lock. Starter button on floor board. Throttle at right of seat.



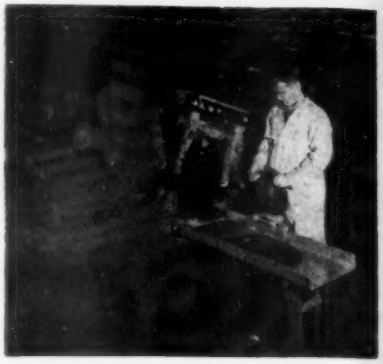
Standard automotive steering wheel and shock absorbing steering gear. Steel guard protects operator. Easy in-and-out access from left side.

Visit our Booth No. 639
6th National Plant Maintenance and Engineering Show • CHICAGO JAN. 24-27

WILSHIRE POWER SWEEPER CO.
ELGIN, ILLINOIS · GLENDALE 4, CALIFORNIA
In Canada: Plant Maintenance Equipment Co.
Vancouver · Toronto · Montreal

For More Information Circle No. 191 on Inquiry Card—Page 17

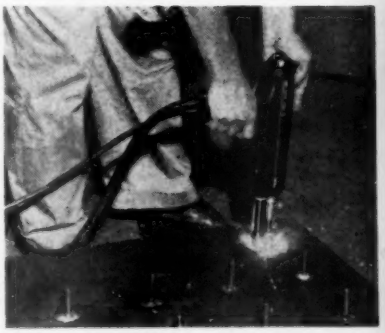
Power Saw Designed for Fast Performance



Announcing that it is for the first time entering the power saw field, the DoALL Co., 254 Laurel Ave., Des Plaines, Ill., has developed a power saw for utilizing high-speed steel band. The machine incorporates adjustments and hydraulic controls for feed pressure, band tensioning and infinitely variable speed change (90 to 350 fpm). The machine is claimed to out-perform power hack saws at least 2 to 1.

Circle No. 66 on Inquiry Card—Page 17

Stud Welding Gun Features Simplified Maintenance



A versatile stud welding gun is available with cable and controls in two sizes: one size is for welding studs with diameters up to ½"; the other for any diameters from 10-gage up to one-inch and greater. The design of the gun accommodates a greater range of stud length without changing adaptors or other accessories. The arc length can be adjusted without disassembly. It is made by Gregory Industries, Inc., Nelson Stud Welding Div., Lorain, Ohio.

Circle No. 67 on Inquiry Card—Page 17

Want more Facts on any of the products shown in this issue? Get them quickly and easily by using the INQUIRY CARD PAGE 17

POWELL VALVES . . . THE COMPLETE QUALITY LINE . . . POWELL VALVES

. . . THE COMPLETE QUALITY LINE . . . POWELL VALVES . . . THE COMPLETE QUALITY LINE . . .

POWELL LUBRICATED PLUG VALVES

FIG. 3059G—300-Pound Steel Flanged End Valve. Sizes 6" to 12".

FIG. 1559—150-Pound Steel Flanged End Valve. Sizes 1" to 4".

POWELL VALVES . . . THE COMPLETE QUALITY LINE . . . POWELL VALVES

Powell Valves—the *complete* quality line—offer many outstanding features in these new Lubricated Plug Valves, such as quick and sure operation and a positive seal when the valve is closed.

Valves are available with screwed or flanged ends; single, screwed and bolted gland types, and in Semi-Steel, Carbon Steel, Bronze, Ni-Resist, Monel Metal, and Stainless Steel. Semi-Steel valves are rated 175 and 200 pounds W.O.G.; Steel valves, 150 and 300 pounds W.P. Sizes from 1" to 12". Valves in sizes 6" and larger can be furnished with gears for gear operation. Distributors located in principal cities. For descriptive literature—or help on valve problems—write direct to

The Wm. Powell Company, Cincinnati 22, Ohio.....109TH year

For More Information Circle No. 192 on Inquiry Card—Page 17

Facts at your FINGERTIPS

● The advantages of Reflex Liquid Level Gages. The right type and size gage with suitable valves for pressure, temperature, visibility range and valve centers. Multiple section gages. Drop Forged bodies. Pyrex glass. Basic and special designs.

● When to use Transparent Liquid Level Gage Sets. High pressure steam service. Adapters, valves, connections. Types available.

● Tubular Liquid Level Gages and a selection of Gage valves. Specifications. "Floating Shank." Connections and special features.

● Metallurgical specifications.

Penberthy's Catalog 35, with illustrated facts and specifications, is your best guide to selecting the right liquid level gage sets at the most economical cost. In the complete Penberthy line, there are standard products for almost every application. Where your needs are special or unique, use our experience of almost 70 years to solve them. Many thousands of satisfied users. Write for your copy of Catalog 35.

Established 1886

PENBERTHY INJECTOR COMPANY

Division of the Buffalo-Eclipse Corporation

1242 Holden Ave., Detroit 2, Michigan

There's Certain satisfaction in

PRODUCTS BY

PENBERTHY

- EJECTORS
- EDUCTORS
- EXHAUSTERS
- SYPHONS
- ELECTRIC SUMP PUMPS
- CYCLING JET PUMPS
- INJECTORS

For More Information Circle No. 193 on Inquiry Card—Page 17

Heavy-Duty Cutters

Interstate Drop Forge Co., Milwaukee, Wis., announces a line of heavy-duty cutters for handling concrete reinforcing rod, hard bolts, chain and high strength steel strand and guy wire. The "geared-for-action" leverage has been greatly increased and new alloys and heat treatment have been employed to give long service life with no appreciable increase in weight. The handle has been specially designed to give ease of operation and comfort in all positions. The cutters are available in capacities up to 9/16" diam.

Circle No. 68 on Inquiry Card—Page 17

Stapler Quickly Installs Cable Lines

The Heller Co., 2153 N. Superior Ave., Cleveland 14, Ohio, says that its lightweight, one-hand operated stapler packs the power of a hydraulic tool to effect time and money savings in the installation of electric cable lines and copper tubing. The gun shoots a heavy staple with each easy squeeze of the trigger and fastens cables or tubes securely to many types of building materials.

Circle No. 69 on Inquiry Card—Page 17

Featuring Darnelloprene treads - a soft, resilient Neoprene rubber compound that has superior qualities in resistance to oils, waxes, most chemicals and oxidation - these casters offer ease of movement, quietness and protection for floors.

DARNELL CASTERS & WHEELS

Always SWIVEL and ROLL

FREE DARNELL MANUAL

DARNELL CORPORATION, LTD.

DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

For More Information Circle No. 194 on Inquiry Card—Page 17

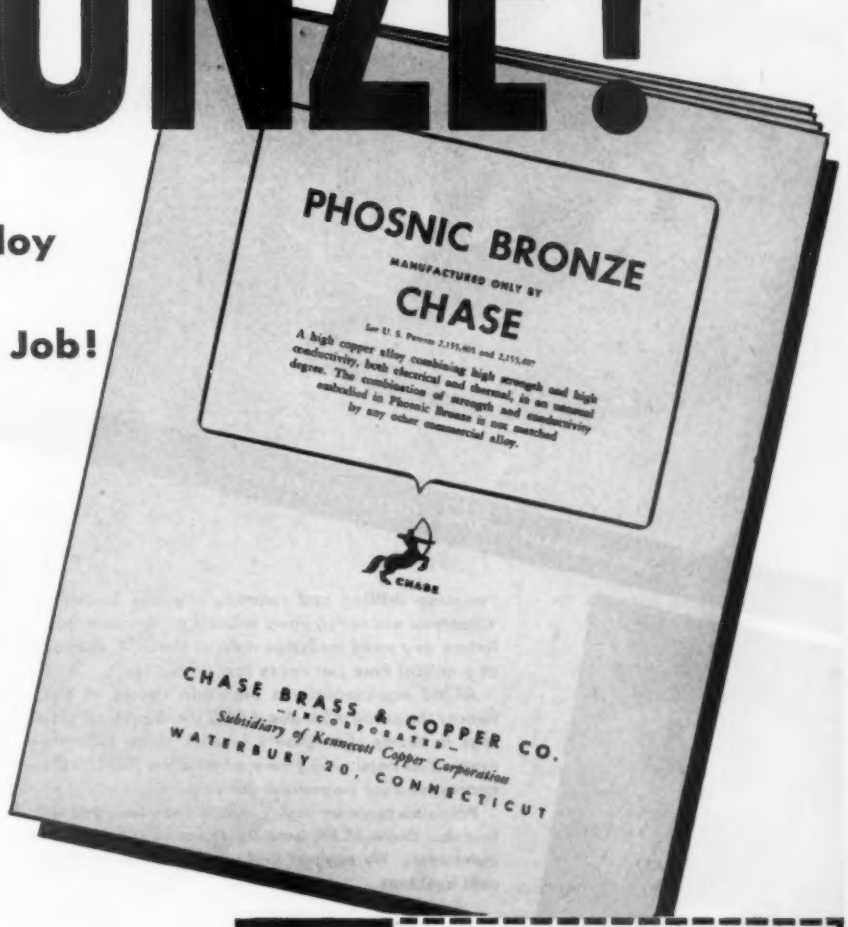
PHOSNIC® BRONZE!

This patented Chase alloy may be the perfect metal for your Special Job!

For jobs requiring a metal with high strength as well as high conductivity, Chase Phosnic Bronze is ideal.

The combination of high strength and high conductivity found in Chase Phosnic Bronze *is not matched by any other commercial metal!* In addition, Chase Phosnic Bronze has excellent workability, high corrosion resistance.

For complete information on this special Chase alloy, check the coupon below.


PHOSNIC BRONZE
MANUFACTURED ONLY BY
CHASE
A high copper alloy combining high strength and high conductivity, both electrical and thermal, in an unusual degree. The combination of strength and conductivity embodied in Phosnic Bronze is not matched by any other commercial alloy.
CHASE BRASS & COPPER CO.
—INCORPORATED—
Subsidiary of Kennecott Copper Corporation
WATERBURY 20, CONNECTICUT

Chase®
BRASS & COPPER CO.
WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION
The Nation's Headquarters for Brass & Copper (†sales office only)

Albany†	Chicago	Denver	Indianapolis	Minneapolis	Philadelphia	St. Louis
Atlanta	Cincinnati	Detroit	Kansas City, Mo.	Newark	Pittsburgh	San Francisco
Baltimore	Cleveland	Grand Rapids†	Los Angeles	New Orleans	Providence	Seattle
Boston	Dallas	Houston	Milwaukee	New York	Rochester†	Waterbury

FREE

Chase Brass & Copper Co.
Waterbury 20, Connecticut
Dept. Purc. 155

Gentlemen:
Please send me your free Phosnic Bronze booklet.

Name_____
Position_____
Firm_____
Street_____
City_____ State_____

For More Information Circle No. 195 on Inquiry Card—Page 17

Precision drilling and reaming requires bushings. When you are called upon to build or service a jig or fixture you need bushings right at hand. A shortage at a critical time can cause lost production.

ACME representatives maintain stocks of over twenty thousand ASA and ACME standard size bushings in many strategically located major industrial areas. You need only phone or wire the ACME office nearest you for immediate delivery.

Precision made by highly skilled operators, you will find that these ACME bushings meet your highest requirements. We suggest that you try Acme for finest drill bushings.

SEND FOR OUR CATALOG AND PRICE LIST

Bushings and all other carefully machined and precision made ACME products. Filled with valuable information for tool engineers—designers—plant executives—purchasing agents.

ACME INDUSTRIAL COMPANY
211 N. LAFLIN STREET, CHICAGO 7, ILLINOIS

Manufacturers of standard dowel pins • Chamfer micrometer gages • Portable bench centers
Roughness comparison specimens • Hardened and ground parts manufactured to order

For More Information Circle No. 196 on Inquiry Card—Page 17

Pallet Dispenser, Stacker Cut Maintenance Costs

Claimed to be the first pieces of equipment ever produced to reduce the ever-present problem of pallet maintenance cost, the development of automatic pallet dispensers and stackers is announced. Both units consist of a raising and lowering mechanism and a magazine to hold a quantity of pallets. The automatic pallet dispenser may be placed at any production line point, where empty pallets are required, or at any shipping dock area where incoming freight is to be palletized. The dispenser will deliver a single empty pallet either onto a conveyor or wherever wanted. The stacker is placed at the pallet unloading point. Empty pallets are placed on a short conveyor and roll into stacker where they are automatically raised into the magazine. Fork trucks do the loading and unloading. The units are made by Beacon Machinery, Inc., P. O. Box 188, East St. Louis, Ill.

Circle No. 70 on Inquiry Card—Page 17

Also Noted . . .

Built by the Fuller Brush Co., Machine Div., Hartford, Conn., a **wastebasket scrubber** cleans 200 circular wastebaskets an hour. The machine is intended for large office buildings, or other businesses where numbers of wastebaskets are cleaned regularly.

Circle No. 71 on Inquiry Card—Page 17

It is now possible for the plant itself, by means of standardized parts, to build its own **safety guards** for gears, flywheels, moving parts of machines, etc. They can be assembled and installed at point of use with just a screw driver, hammer, hand snips and a hack saw.

(*Please turn to page* 160)

For More Information Circle No. 197 on Inquiry Card—Page 17 →

TEXCEL®

CELLOPHANE TAPE

PRODUCT OF PERMACEL TAPE CORPORATION, NEW BRUNSWICK, NEW JERSEY

a Johnson & Johnson company

Manufacturers of Phillips head and other precision cold headed parts know a good thing when they *see the production records*!

In plants where Keystone "Special Processed" Wire is on the job, output per machine, per man, per hour has increased. Die life, for example, is often more than doubled — which in turn decreases machine down time and labor costs. A higher quality end product with its lower rejection rate helps place the per unit cost on a much more profitable level.

The superior grain flow characteristic of "Special Processed" Wire, together with its structural soundness, give this wire unsurpassed performance on any unusually difficult cold heading job. For further information, contact your Keystone representative or write direct.

Keystone Steel & Wire Company
Peoria 7, Illinois
Industrial Wire Specialists

For More Information Circle No. 198 on Inquiry Card—Page 17

(*Continued from page* 158)

Pre-fabricated parts are produced by Harrington & King Perforating Co., 5655 Fillmore St., Chicago 44.

Circle No. 72 on Inquiry Card—Page 17

An **O-ring seal**, of aircraft quality has been developed by Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio, for hydraulic service. Temperature range of this new O-ring is —65 F to 300 F, while range of previous model was —65 F to only 200 F. The rubber material for the new ring meets Military Specifications Mil-P-5516A and Mil-P-18017.

Circle No. 73 on Inquiry Card—Page 17

Michigan Abrasive Co., 11900 E. 8-Mile Rd., Detroit 5, Mich., is introducing commercially a 50″ wide **coated-abrasive resin waterproof cloth belt.** Under tests, it is claimed to remove stock four times faster than by any previous method. It is also claimed to be safer and more effective because it uses water as a coolant: hazards from sparks are absent and non-oily cloth surface enables sharper cutting grit bite.

Circle No. 74 on Inquiry Card—Page 17

Designed by Townsend Co., New Brighton, Pa., a **multi-purpose fastener** with a one-piece metal washer-head and assembled neoprene washer is claimed to prevent leaks, protect surfaces, absorb shock and stop squeaks. When fastener is seated, an undercut in washer head traps and controls the flow of the neoprene at outside edge, forming water- and air-tight seal.

Circle No. 75 on Inquiry Card—Page 17

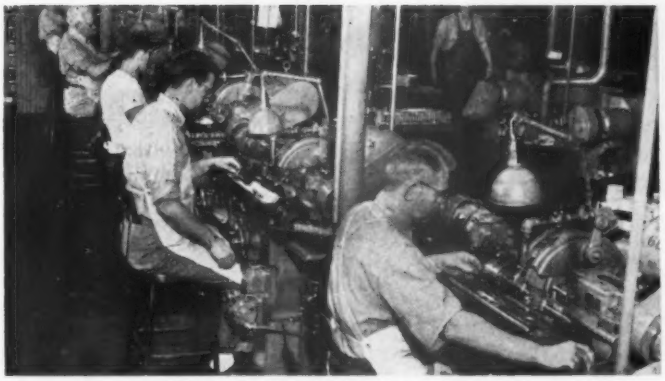
Frontiers of the inert gas welding process are said to have been expanded by the availability of an **"activated" electrode**, mild steel wire. The activation agents change the burn-off rate so that stable spray-type transfer can be obtained on d-c, straight polarity without oxygen additions to the shielding gas. It is made by Air Reduction Sales Co., 60 E. 42nd St., New York 17, N.Y.

Circle No. 76 on Inquiry Card—Page 17

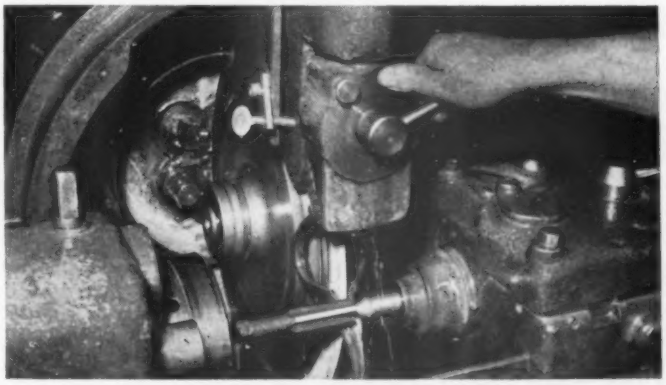
Enamelstrip Corp., Allentown, Pa., is producing **coil vinyl-to-metal laminate.** It is available with either steel or aluminum base metal in commercial coil gages. It has many times greater corrosion resistance than galvanized steel and is inert to most chemicals. In coil form, laminate benefits from fabrication economies—automatic feed, use of progressive dies, less scrap, etc.

Circle No. 77 on Inquiry Card—Page 17

TAP PRODUCTION IS HY-PRO'S SPECIALTY



HY-PRO SPECIALIZES tap making within every department —from design through all manufacturing operations— to insure the highest-quality product for you.



THE HIGH DEGREE OF AUTOMATIC OPERATION in Hy-Pro's production lines means the prompt delivery of your order, while maintaining tolerances down as low as .0001 in.

. . . it can help cut man-hours from your operation

Tap production is specialized at Hy-Pro. The full staff concentrates their work on this one important line. Every operation in the manufacture of Hy-Pro taps is constantly restudied and re-evaluated to bring you the finest quality product at a minimum cost.

It is this dependable record through the years which has won Hy-Pro their reputation as "*The Tap Specialists*".

It will pay you to get in touch with your Hy-Pro distributor or to call Hy-Pro direct. They offer you a full line of highest-quality taps, backed by the experience of specialized production.

REG. U.S. PAT. OFF.

HY-PRO

HY-PRO TOOL CO., NEW BEDFORD, MASS., U. S. A.

DISTRIBUTORS IN ALL LEADING CITIES

ADDITIONAL WAREHOUSES:

6046 COLLEGE AVE. OAKLAND 18, CALIF. PIEDMONT 5-4337

10428 W. McNICHOLS RD. DETROIT 21, MICH. UNIVERSITY 4-1077

1132 LAWLER ST. (WORTH) CHICAGO, ILL. GARDEN 4-0217

109 EDISON PL. NEWARK 5, N. J. MARKET 2-4318

For More Information Circle No. 199 on Inquiry Card—Page 17

Pump manufacturer *standardizes* on LATTICE BRAID* Packing for *all* centrifugal pump models

*Registered Trademark. *Only* Garlock makes LATTICE BRAID rod and shaft packings.

Peerless Pump Division, Food Machinery and Chemical Corporation, Los Angeles, manufactures an entire line of centrifugal pumps. Before changing to LATTICE BRAID, Peerless regularly received frequent complaints on packing from their customers. Now that Peerless has *standardized* on LATTICE BRAID, complaints are rare. In addition, Peerless reports that LATTICE BRAID *resists* the excessive gland pressure often applied by uninformed repairmen. The result is that there is *less* packing and sleeve wear.

Put Garlock LATTICE BRAID Packing to work for your company. All the braided strands of this unique packing are lattice linked together into one structural unit. The strands hold together even when the packing is worn far beyond the limits of wear of ordinary braided packings.

LATTICE BRAID is made from flax, cotton, asbestos, wire-inserted asbestos, Teflon, and asbestos with Teflon impregnation—for various types of services.

Get all the facts about LATTICE BRAID *Packings. Contact your Garlock representative or write for new folder AD-131.*

THE GARLOCK PACKING COMPANY, PALMYRA, NEW YORK

Sales Offices and Warehouses: Baltimore • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Cleveland Denver • Detroit • Houston • Los Angeles • New Orleans • New York City • Palmyra (N.Y.) • Philadelphia Pittsburgh • Portland (Oregon) • Salt Lake City • San Francisco • St. Louis • Seattle • Spokane • Tulsa.

In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK LATTICE BRAID PACKING

For More Information Circle No. 200 on Inquiry Card—Page 17

To redeuce problems of close-up **color photography** to a minimum, Eastman Kodak Co., Rochester 4, N.Y. has announced a close-up attachment, particularly suited to solving photographic problems in industrial laboratories. Producing color transparencies with minimum difficulty, production line personnel with no photographic training can learn to use attachment in minutes.

Circle No. 78 on Inquiry Card—Page 17

Smoother finishes are obtained and less horsepower is required in cutting operations because of the availability of carbide tipped end mills and shell mills with **helical teeth.** Such teeth maintain a constant cutting relation with the work piece. Reduction of tool shock when helical teeth engage the work extends cutting tool life two to three times. Wendt-Sonis Co., Hannibal, Mo., makes them.

Circle No. 79 on Inquiry Card—Page 17

All the materials and tools required for **roof maintenance** can now be procured in packaged units from Lexsuco, Inc., 4815 Lexington Ave., Cleveland, Ohio. One unit is for complete roof resurfacing and the other package for repairing flashings, gutters, cracked or blistered felts and other roof weakspots. The packaged unit simplifies purchases and eliminates guesswork in computing quantities of items needed.

Circle No. 80 on Inquiry Card—Page 17

Thumb-button trigger action and thirty-five foot range give a line of **chemical fire extinguishers** long-distance, panic proof fire protection effectiveness. Available in 6, 12, 20 and 30 lb sizes, they are said to stop large oil and gasoline fires in seconds. Operating under 500 psi, units attain 40 ft streams. Manufacturer is Randolph Laboratories, Inc., 8 E. Kinzie St., Chicago, Ill.

Circle No. 81 on Inquiry Card—Page 17

An **air hose** is made from high tenacity Cordura rayon cord, thoroughly impregnated with a rubber cement, and made under tension on steel mandrels. The air hose is light, flexible and furnished with a Neoprene oil resistant tube. The high quality cover resists all extreme wear, abrasion and service conditions likely to be encountered in any industrial use, according to the maker, Hamilton Rubber Mfg. Corp., Trenton 3, N.J.

Circle No. 82 on Inquiry Card—Page 17

Office Equipment and Supplies section of PURCHASING Magazine

JANUARY, 1955

Modern styling with an accent on "home-like" comfort is a feature of the president's office in the new office building of General Fireproofing Co., Youngstown, Ohio. Liberal use of color and textile design makes for a more relaxing atmosphere.

PURCHASING MAGAZINE—A CONOVER-MAST PUBLICATION
205 EAST 42ND STREET, NEW YORK 17, N. Y.

A Working System for Stock Control

By Ralph Rau, Assistant Treasurer

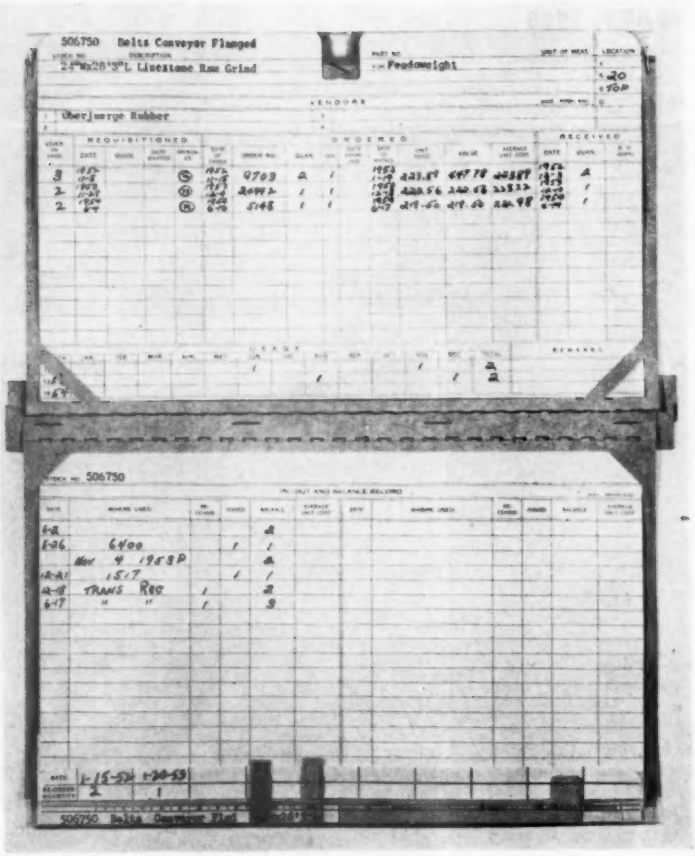
Accounting Dept. Manager
Missouri Portland Cement Co.
St. Louis, Missouri

TIGHT CONTROL over plant supply, the result of a new classification and numbering system, was one of the important outgrowths of an intensive modernization program undertaken by Missouri Portland Cement Co., St. Louis, shortly after World War II. During the following years, the company has seen the erection of two modern plants and the gradual abandonment of old, inefficient machinery. However, well aware of the need for streamlined storeroom procedures to make full use of the potentialities of modern equipment, Missouri Portland focused considerable attention on solving its storeroom problems.

As a starting point in this vital reorganization, the Business Services Department of Remington Rand Inc. was enlisted to help put a sound, workable classification and numbering system into operation.

Working with stores supervisors, systems specialists reclassified all parts and equipment, numbering them under a six-digit code. The first digit of a given part now represents its major category—machine part, electrical, operating supplies, etc. The next two numbers designate the sub-classification—casting, fitting lubricant, etc. The final three digits are reserved for specific item designation.

This organized coding is a key feature of both bin location and inventory methods. Thus, each storeroom has a rotary turret index



The illustrated double Kardex pocket is a typical example of the variety and detailed information available to a reviewing clerk. Note that the top card carries a general history of the purchases of the item as well as vital statistics on usage and location in the storeroom. The bottom card of this particular item (stock #506750) keeps a running check of the stock on hand. At the bottom of the card, visible even when the top card is folded down, are the colored celluloid signals and tabs that quickly "flag" immediate information to the reviewer. The tab on the left, which is green, covers the digit 9 on the scale—thus indicating that September is the most logical month to review the status of the item. To the green tab's right is an orange tab. This indicates that December 1953 (This record is shown to run from January 1952 to December 1954) was the last month in which a flanged conveyor belt was issued from stock. The large orange signal on the right is the quantity signal which also indicates the stock status. In this case it means 1 to 100 (actual stock on hand—3) set in the normal stock position. Should the stock on hand drop below the normal level, the signal would be moved to the left to draw attention to a reorder situation. When such a situation developed, a black tab would be inserted in the center of the card's bottom. After the new stock was received, the black tab would be removed and the orange signal moved back to the normal stock position.

Sliding signals (right side of slide) flash stock level and purchasing information to clerk. Black signal in center of margin shows that purchase order has been initiated.

Rotary index, with celluloid-protected line inserts, provides foremen with quick indentification of parts, gives storeroom clerk bin location in seconds.

(into which interlocking, celluloid-protected line inserts can be easily placed or removed) conveniently located on a counter. Divided into two sections, the index first lists all parts in strict alphabetical order, giving bin location and part number.

The second section has a breakdown of parts for each major machine in the plant listed alphabetically and followed by their components.

The inventory control mechanism for this type of system is highly efficient and practical. The old, discarded office method was based on a vertical card file. Its inefficiency was amply demonstrated by the existence of excessive stocks and considerable waste. It provided no dependable means to prevent duplication of items. Consequently, purchasing and stock level control was all but impossible.

Under the new classification and numbering system, which has been operating soundly for some time now, all part numbers for the entire company are assigned by one responsible person. This, naturally, avoids duplication and maintains coherence of identification.

This setup then works into a new inventory file of Kardex equipment. A by-product of the system, incidentally, has given Missouri Portland a 50% saving in time of posting operations alone.

The heart of the file is the assigning of two 8″ x 5″ Kardex cards to each item, thus providing room for a listing of vendors, a requisition/purchase-order/delivery history, a usage recapitulation by month and year, and a continuous in-out balance record.

The use of colored signals in the Kardex is described by Missouri Portland as the real backbone of the system. The visible control, which greatly speeds up reference and handling, uses the signals moving across scales to show follow-up, reorder, normal and over-stock conditions. Stock signals operate as follows: an orange signal indicates quantities of 1-100; a green one means lots of 100-1000; and blue shows 1000-10,000.

A yellow signal appearing on a card indicates items having a zero minimum—big machines, electric motors, etc.

Purchasing uses an easily spotted ¼″ black signal in the middle of the Kardex margin to show that a purchase order for that particular low-level item has been initiated.

A secondary system of colored tabs provides even more accurate control and contributes to the overall smoothness of the record-keeping operation.

As the company is still in the process of eliminating "old plant" items—facilities to be abandoned but still producing, a quarter inch yellow tab is used to "flag" the existence of these items.

For stock disbursement, office clerks rapidly recognize stock status by the presence of orange and green tabs moving over a 1 to 12 scale. Simply, it means that the orange tab, on the scale, shows the last month of disbursement from stock, while the green one, over the same scale, indicates the selected month for review of the item's history.

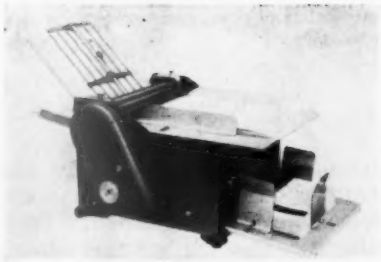
Regularly scheduled reviews of the Kardex slides are made to spot items needing attention. The visual impact of the colored signals which are not at the "normal" position makes for a very rapid operation. Normal items are dismissed at a glance as a clerk reviews the slides.

One of the most costly nuisances —a year-end inventory for supplies —has been completely eliminated. Rather, an easily handled running inventory by sections has taken its place. Impossible under the old vertical index card system, this benefit alone has saved much in time—and overtime.

Even the cost of inventory analysis has been reduced. The master list is created by the simple job of photographing the slides with the righthand "signal" side blanked out. A far more efficient and speedy operation compared to the old method of typing.

From an administrative point of view, the results have been highly gratifying. Not only has it proved an asset in office recording procedures, but even down in the plant among the foremen, its speed and efficiency has brought an enthusiastic response. The company maintains that not only has the streamlined operation proved economical, but it has contributed considerably to smooth plant operations.

OFFICE EQUIPMENT News



Faltex Div., Lansdale Products Corp., Lansdale, Pa., is introducing the Faltex electric office folding and letter opening machine. It makes all folds in general office use and has a maximum output of 10,000 sheets per hour. Varying weights and sizes of paper can be used and more than one sheet can be folded at a time. It needs only 30 seconds to be switched from folding to letter opening.

Circle No. 83 on Inquiry Card—Page 17

Punched cards for accounting use are prepared as an automatic by-product of typewriting operations with a new machine announced by **International Business Machines Corp., New York.** It is known as the Typewriter Card Punch and consists of an IBM electric typewriter electrically connected by cable to an IBM card punch. Typewriter operation is normal, except that upper case operation automatically provides for simultaneous card punching, and lower case permits the typing unit and punch to operate independently.

Circle No. 84 on Inquiry Card—Page 17

Eastman Kodak Co., Rochester, N. Y., has published a folder illustrating and describing its new Kodagraph Microprint Reader, a device for use in offices and libraries where literature and reference books have been reduced to microprint cards.

Circle No. 85 on Inquiry Card—Page 17

A metal loose leaf binder designed to complete the binding requirements of office duplicating departments has been introduced by **General Binding Corp., Chicago.** The new GBC binder enables a department to bind anything duplicated, printed, typed or drawn in either plastic or metal bindings. Standard spaced punching permits interchange. Pages may be inserted or removed any place in the book without taking the book apart.

Circle No. 86 on Inquiry Card—Page 17

The costly problem of **collating and assembling** typed or printed sheets is efficiently handled by the Accra-Feed Collator of **Reproduction Products Co., Detroit.** The work of five to six people is done by a single machine which can compile up to 50 identical sets of printed matter in one operation, organizing each of 125 different pages in proper sequence. Operating speed is 6,000 sheets per hour. Photo-electric scanning devices automatically eliminate all unprinted pages. An adjustable micrometer rejects double sheets. An electronic system prevents missing or skipping a sheet. An illustrated brochure showing all models can be obtained from the company at 12780 Westwood Ave., Detroit 23.

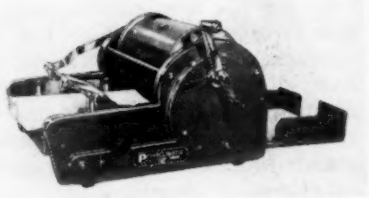
Circle No. 87 on Inquiry Card—Page 17

A complete, new line of **office appliance pads,** under the trade name of Premier Sure-Grip, has been developed by **Premier Materials Co., Chicago.** Made of heavy, solid, sponge rubber, with a corrugated pattern to provide a suction grip on the surface of a desk or work table, the pads are available in six sizes to fit virtually all office machines. In addition to eliminating the need of boring holes to secure machines, it is claimed that the pads appreciably reduce office noise and clatter.

Circle No. 88 on Inquiry Card—Page 17

Specific suggestions on where to look for "concealed" problems in business operation and management are contained in a booklet prepared by the makers of P-A-X, private internal telephone systems. Titled "Just as the doctor looks inside", it analyzes the problems of intra-office telephone communications. Copies can be obtained from **Automatic Electric Sales Corp., 1033 W. Van Buren St., Chicago 7.**

Circle No. 89 on Inquiry Card—Page 17



A new, model 5-A rotary **stencil duplicator** is being introduced by **Print-O-Matic Co., Inc., Chicago.** Included on the new model is an automatic impression roller release, to prevent ink from getting on the roller, a "snap-on" feed arm, front paper register guides and an automatic feed.

Circle No. 90 on Inquiry Card—Page 17

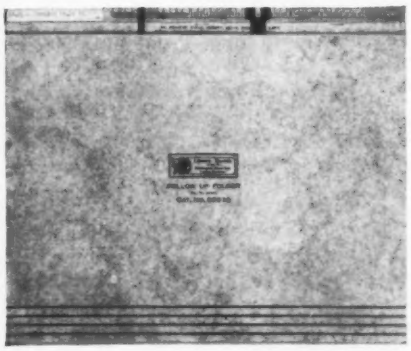
(*Please turn to page* 170)

THREE PURCHASING DEPARTMENT PROCEDURES SAVE YOU TIME...MONEY!

Increase The Efficiency of Your Purchasing Department

This 20-page, full-color manual pictures in detail the most modern, proved administrative control systems for purchasing. It shows many ways in which the efficiency of a Purchasing Department may be increased. See and examine the methods used by some of the country's leading firms...when bids are needed ... when placing a purchase order ... when following up a purchase order ... and so on.

FOR YOUR COPY — SIMPLY CIRCLE X1202



New Purchase Order System Simplifies Procedures...Quickly Pays For Itself

Southern Railway has greatly simplified its purchasing procedures, reduced costs, eliminated loss of time and cut personnel turnover. How? With a new system which relies on a separate Remington Rand Visible-Tip Folder for *each* active order. Now it is possible to get from the order clerk, immediately, a complete picture on any order ... number of items bought ... prices paid ... length of time for delivery ... facts on the status of the order. The clerk needn't leave the desk! **CIRCLE SN768.**

Improved Follow-Up Control Results in Office Time Saving of 80%

The Machinery Division of Dravo Corp., Pittsburgh, Pa., currently issue about 15,000 purchase orders a year. In the past, follow-through was based on regular paper copies of the orders, which were kept in standard vertical files. Each time reference was necessary, the clerk would remove the order copy from the file, bring it to the proper desk, subsequently refile it. *Now, this time-consuming, laborious procedure is eliminated ... with an estimated time saving of 80%.* The follow-up copies of the regular set of purchase forms are Kardex forms which remain in four Mobile Kardex cabinets. He refers instantly to the order copy, takes indicated action and makes proper notations *without* removing the card.

FOR DETAILS OF THIS PROCEDURE, SEE CH954

Traveling Requisition Simplifies and Speeds Purchasing

One of the most effective means of simplifying and speeding purchasing developed in recent years is the visible inventory control system that provides a traveling requisition. Clerks don't have to transcribe an order from an inventory card to a requisition blank. The top card of the inventory pocket, when removed, serves as the requisition. It saves much time because all information concerning suppliers, cost, previous orders placed, past usage, present inventory and other facts required for executive decision are contained right on the form. After the replenishment order is written, it is routed back to the inventory pocket for continued use.

GET FULL PARTICULARS — CIRCLE KD375

Remington Rand INC

Room 1168, 315 Fourth Ave., New York 10

Kindly circle the literature you desire:

SN768 X1202 KD375
CH954

Name_____

Title_____

Firm_____

Address_____

City_____ Zone____ State_____

P-9A

--- Profit-Building **IDEAS** For Business ---

(Advertisement)

For More Information Circle No. 203 on Inquiry Card—Page 17

Should they all use the same carbon paper?

Three secretaries . . . three jobs . . . three different carbon papers needed! Alice's boss sends one-of-a-kind letters with one carbon required Joan must produce eight clear carbons for routing. Claire's boss is a statistician and his figures must be legible. No one carbon can do all these jobs equally well.

Webster's famous MultiKopy Carbon Papers come in weights and finishes for all these office needs and many more. Each sheet is constructed for true value in color, sharpness of impression, and wear. There are 52 weights and finishes for standard machines and 20 for noiseless machines

With MultiKopy you can use a "custom" carbon — tailored to the machine, the job, and the individual touch of the operator Discuss with your stationer the kinds of MultiKopy carbons that your office requires. Then see what a difference using the right carbons makes — in savings of time and office supplies and in clear legible impressions

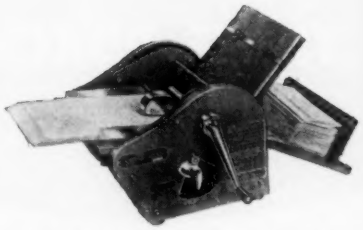
Carbon papers and inked ribbons for every office need by:

F. S. WEBSTER COMPANY

7 Amherst Street

Cambridge 42, Massachusetts

For More Information Circle No. 204 on Inquiry Card—Page 17

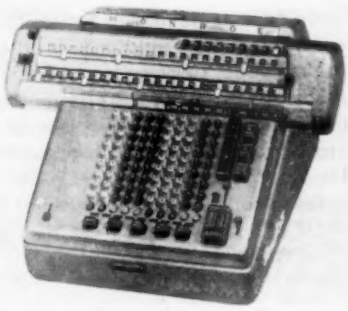


The **Print-O-Matic Co., Inc., Chicago,** has developed a Fold-O-Matic desk model, manually operated, automatic feed **folding machine.** Its patented feed and separator cap allows 1, 2, 3 or 4 sheets-at-a-time feeding. Even stapled sheets are fed automatically. The unit takes less than two square feet of desk space. It molds 120 sheets per minute. Sheets from 5" to 8½" x 14" can be folded eight different ways by merely setting a simple control. The machine is made of steel and is finished in Print-O-Green Hammertone.

Circle No. 91 on Inquiry Card—Page 17

A **fountain pen** that is reloaded by leakproof, unbreakable plastic cartridge is being marketed by **Waterman Pen Co., Inc., New York City.** Known as the Waterman C/F, it is filled in 10 seconds by inserting a hermetically sealed cartridge of fresh ink into the barrel. A single C/F cartridge contains much more ink than the standard fountain pen and also assures non-drying out if the pen is left uncapped for any period of time. Cartridges will be available in red. washable blue, green or blue-black ink.

Circle No. 92 on Inquiry Card—Page 17



Monroe Calculating Machine Co., Inc., Orange, N. J., is introducing another **automatic calculator.** The latest model is designated as the 8-N, or Simplex Monroe-Matic. It offers automatic dividend alignment with on and off control; automatic clearance of upper dials from the divide key; automatic carriage return from negative, accumulative and multiplying keys; split control for the lower dials for holding amounts in either side of the split; and automatic keyboard clearance control permitting amounts to remain on the keyboard or be cleared at the end of the operation. The machine is being made with 2-series dials (8-N-212) and 3-series dials (8-N-213).

Circle No. 93 on Inquiry Card—Page 17

A new Swedish **adding machine** which combines the features of the standard 10-key machines with a new auto-multiplier as well as an optional stepover feature has been announced by **Facit, Inc.**, New York, distributors for Odhner adding machines. Known as the Odhner Model XX-11-C, it makes multiplcation automatic on an adding machine and claims reduction of errors resulting from manual multiplication. Nine small keys on the right of the machine's keyboard are designed so that the multiplier can be entered one number at a time. Despite their small size of the keys the machine is so designed that even though a number of keys are depressed, only the top key is activated.

Circle No. 94 on Inquiry Card—Page 17

William A. Force & Co., Inc., New York, is now producing an **automatic numbering machine** called the Force Paragon Model 1C. It features a hard-rubber impression bed and a rubber base for noise-free operations. It has 3/16″ Gothic figures with 6 wheels, and will number consecutively, in duplicate, or repeat. It is designed for efficient use with carbon snap-out forms.

Circle No. 95 on Inquiry Card—Page 17

A new, fully **automatic desk calculator** has been introduced by **Monroe Calculating Machine Co., Inc., Orange, N. J.** Known as the Duplex (Model 66-N) it is a double carriage, rotary calculator capable of direct accumulation. It can accumulate the results of multiplications or divisions and automatically add or subtract from the accumulation, with positive proof after each step, at the flick of a button.

Circle No. 96 on Inquiry Card—Page 17

Bing **THE BUSINESSMAN FINDS REAL COMFORT IN HIS HARTER CHAIR**

Paramount Star Bing Crosby, Vice President of Minute Maid Frozen Juices, uses the Harter 65 in his office and dressing room.

The handsome Harter 65 Executive Armchair is every bit as comfortable as it looks.

"It's the finest!" That's how Bing Crosby describes the comfort and quality he finds in his Harter executive posture chair. And knowing Bing's relaxed art of making hard jobs seem easy, you can trust him to choose the posture chair that helps him work in true armchair comfort.

You'll enjoy the same superb comfort in the Harter 65. It has luxuriously deep foam rubber cushions molded to fit in seat, back and arms. Precise handwheel controls adjust this chair exactly to your stature to encourage healthful posture. Rich upholsteries, flawless finishes complete the fine look of success this chair gives an office. Write for informative booklet, "Posture Seating Makes Sense." We'll send name of your nearest Harter Dealer.

Harter Corporation, 129 Prairie, Sturgis, Mich.

HARTER
STURGIS, MICHIGAN
POSTURE CHAIRS

For More Information Circle No. 205 on Inquiry Card—Page 17

Easy does it!

. . . it's so easy to store your standard index cards
. . . so easy to remove trays to office locations
. . . so easy to stack at work centers . . . *and at a new low cost*

It's all so easy, when you install the *new* Peerless Card Files — with the easiest-to-remove, easiest-to-replace trays with which you ever worked.

In addition to all of the famous, job-proven Peerless construction features, you'll welcome these advantages. Tray walls are higher than card height . . . prevents marring cards . . . makes stacking easier. Full finger slots, in the base of tray and drawer permit quick reference to any card section by pushing-up-from-below.

Positive follower-block locking means no "give" . . . just the right compression prevents card warping and spilling. New thumb grip eliminates "thumbing" damage to cards.

Your Peerless Dealer would like to explain why the V-shape of the tray separator guide improves tray transferability — and when it comes to longer, far better service in office equipment, he's a good man to know.

PEERLESS

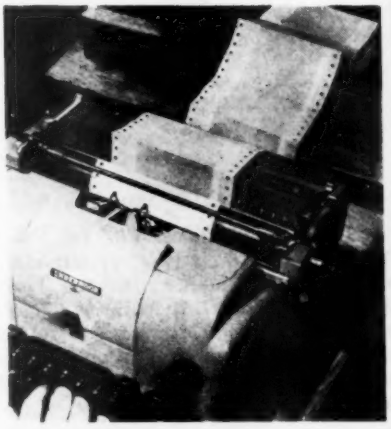
PEERLESS STEEL EQUIPMENT CO.
6600 Hasbrook Ave., Philadelphia 11, Pa.
New York • Chicago • Dallas • Los Angeles

a metal desk, file or table for every office need

For More Information Circle No. 206 on Inquiry Card—Page 17

Acme Visible Reocrds, Inc., Crozet, Va., is marketing **photo panels** for the preparation of lists of prices, parts, personnel, etc., for reproduction. Called Acme Photo Panels, they are ideal for lists which must be distributed in quantities and require frequent changes. The panels come in various sizes, with runways to hold from one to four columns of cars. Descriptive literature, samples, etc., are available.

Circle No. 97 on Inquiry Card—Page 17



Weber Label and Marking Systems, a division of Weber Addressing Machine Co., Mt. Prospect, Ill., is now producing **continuous marginal punched stencils.** Called the Weber Continue-Matic, the stencils have a printing capacity of 3¼" wide by 2" deep. They are primarily designed for preparation on automatic tabulating equipment as well as manual and electric typewriters. They are made to be used on Weber hand marking devices to address shipments. They are perforated every 3" for easy separation and have a carbon sheet between the stencil and carrier sheet so that the stencil copy can be proof read, even when typed without a ribbon.

Circle No. 98 on Inquiry Card—Page 17

A twin 8-watt fluorescent **work light,** called the Lite-Mite, is being marketed by **Stocker & Yale, Inc., Marblehead, Mass.** The LiteMite provides 150 foot candles of diffused light in a localized pattern. It is of all-steel construction and is easily adjusted. The light can be mounted vertically or horizontally.

Circle No. 99 on Inquiry Card—Page 17

Part of your product...

MONGOL is "part of the product" in every American industry...the preferred pencil of America-on-the-job! Mongol records the test pilot's reactions. Mongol verifies the bank teller's balances. Mongol helps write the big steelman's speech.

Mongol was the first well-known brand of yellow pencil. It's America's standard of quality—and today's Mongol is the smoothest-writing, blackest-writing, longest-wearing pencil you can buy. It's one of more than 3,000 products made by Eberhard Faber, the name people rely on for fine writing materials. Look for that name—Eberhard Faber—on EVERY pencil you buy!

Trademarks Reg U. S. Pat. Off

EBERHARD FABER SINCE 1849

puts its quality in writing

NEW YORK TORONTO

For More Information Circle No. 207 on Inquiry Card—Page 17

"letters look better on WESTON BOND"

New Weston Bond is high in quality, low in cost. Its new brighter, whiter color will make your correspondence more impressive, your sales letters more effective. Ask your printer to use it. Write for sample book. Address Dept. PN.

WESTON PAPERS · PROTECT YOUR RECORDS ·

BYRON WESTON COMPANY, DALTON, MASSACHUSETTS

Makers of Papers for Business Records since 1863

For More Information Circle No. 208 on Inquiry Card—Page 17

A new **accessory for ammonia-developing diazotype machines,** which speeds up printing and lowers operating and maintenance costs, has been announced by **Tecnifax Corp., Holyoke, Mass.** Called Slip-Screen, it is a perforated sheet of flexible, plastic-looking material attached to an aluminum holder. It increases the effiiciency of the developer by reducing friction to minimum and stops the accumulation of coating deposits on the developer tank and sealing sleeve. The screen is fed into the developing section of the machine just like a print. The aluminum holder secures it in place. Resting on the top of the developer tank, it provides a smooth, almost zero-frictional surface between the stationary tank and the moving sealing sleeve.

Circle No. 450 on Inquiry Card—Page 17

Slide Ring, a new type of **plastic mechanical binding** has been introduced by **Plastic Loose Leaf, Inc., Chicago.** It is composed of two separate plastic pieces, an open multiple ring section and a rigid backbone piece. The ring section holds sheets multi-punched like those used with other types of plastic bindings. The backbone piece slides on the ring section and locks tight. A friction lock at one end of the backbone piece keeps it from slipping. No spreading device, inserting tool or tedious manual operation is needed to replace or insert up-to-date contents pages.

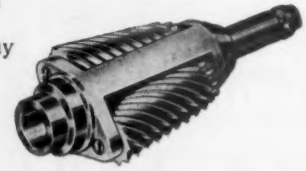
Circle No. 451 on Inquiry Card—Page 17

JUST A MINUTE

Is all it takes to completely revitalize your Apsco Pencil Sharpeners with Apsco's revolutionary new development, the "COMPLETE" CUTTER HEAD ASSEMBLY.

Now, in one convenient, clean operation, office personnel can remove the worn, dull cutter head and replace with the new. Ask your stationer for a demonstration, then order and stock an adequate supply for quick, easy replacement.

Specify, too, Apsco Pencil Sharpeners, Staplers, and Punches. It costs less to buy the best.



Apsco products inc.

P.O. Box 840 Beverly Hills, Calif.
Factories: Rockford, Ill. • Toronto, Canada

For More Information Circle No. 209 on Inquiry Card—Page 17

Every Purchasing Agent Should Have This Book

"Profiting From Industrial Standardization"—$5.50

By Benjamin Melnitsky
Foreword by Stuart F. Heinritz

You will find complete and down-to-earth information on materials standards and specifications . . . purchasing, process and finish specifications . . . parts standards . . . manufacturing standards . . . design practice standards . . . proper review intervals . . . and on through the entire subject of how your company can benefit from a standards program

How to use tested methods to develop and revise standards—how to organize and use a nomenclature system—how to allocate standards activities, responsibilities and authority—how to organize company standards—all these and more are explained thoroughly and concisely in this practical guidebook to industrial standardization.

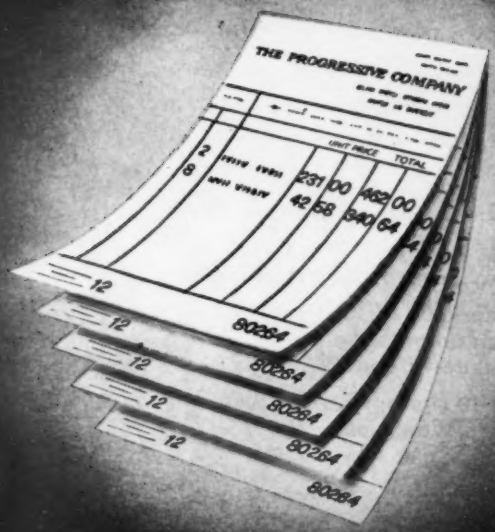
Free 10-day Examination

CONOVER-MAST PUBLICATIONS, INC.

Book Division

205 East 42nd Street, New York 17, N. Y.

new!



NCR *paper* (No Carbon Required)

Makes Copies *without* Carbon!

National has important news for business everywhere! The duplicate copies you see above were made *without* carbon paper! This is made possible by use of a special paper developed by the research laboratories of The National Cash Register Company. It is called "NCR Paper" (No Carbon Required).

NCR Paper puts an end to irksome handling of carbon paper — inserting, removing, storing.

Saves Time, Avoids Smudges. Faster. Can't smudge copies or fingers.

Making multiple records is now as easy as picking up 3, 4, (or more) forms from a stack and inserting them in a typewriter or business machine. And NCR Paper provides *exactly* the same advantages when making copies by hand (receipts, sales slips, guest checks, etc.).

Better Copies. When forms are placed together and written on — by typewriter, business machine, or by hand — clear, clean copies are made without carbon paper.

Ends Carbon Paper Disposal. With NCR Paper, troublesome removal and disposal of used carbon sheets are avoided.

Try the new NCR Paper and be amazed at the new ease, simplicity, cleanliness and time-saving it brings to multiple copying.

Contact your local business forms printer for NCR Paper — or your nearby National representative — or write to The National Cash Register Company, Dayton 9, Ohio.

*TRADE MARK REG. U. S. PAT. OFF.

National

ACCOUNTING MACHINES
ADDING MACHINES • CASH REGISTERS

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio

949 OFFICES IN 94 COUNTRIES

For More Information Circle No. 210 on Inquiry Card—Page 17

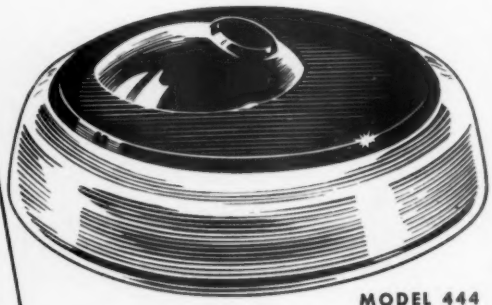
ESTERBROOK DESK SET WITH

The PEN That FILLS ITSELF—

30-DAY MONEY-BACK GUARANTEE*

A truly amazing desk set with a pen that automatically fills itself from a giant ink-fountain in the base. And it's so good, it is *guaranteed to please you!*

- Finger grip never touches ink. No chance for ink to touch you.
- Point instantly interchangeable and renewable.
- Fountain-base "ink-locked" against accidental spillage. Only the pen unlocks the ink. Writes full page or more without redipping.
- Fountain-base holds 40 times more ink than ordinary fountain pen. Won't leak. Won't flood. Easy to clean as a saucer.

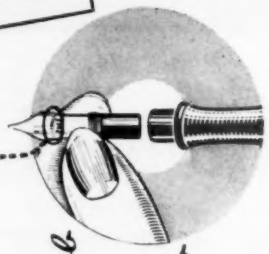


MODEL 444

*30-DAY MONEY BACK TRIAL OFFER

Your regular stationer will be glad to let you try one of these fine Self-Filling Desk Pens on your own desk for 30 days with the understanding you can return it for a full refund if you are not completely satisfied with it.

Choose the right point for the way you write... by number



TO SELECT OR REPLACE ... HERE'S ALL YOU DO

MORE THAN 30 POINT STYLES

2668 General writing · 2550 Bookkeeping · 9314M Medium stub · 2442 Fine Stub · 9550 Extra Fine · 9668 General writing · 2284 Signature Stub

30 NUMBERED POINTS—FOR EVERY WRITING JOB

Esterbrook® DESK PEN SETS

THE ESTERBROOK PEN COMPANY, CAMDEN 1, NEW JERSEY

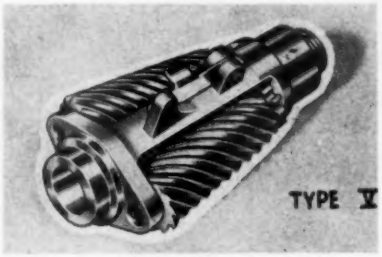
COPYRIGHT 1955 THE ESTERBROOK PEN COMPANY

The Esterbrook Pen Company of Canada, Ltd.
92 Fleet Street, East; Toronto, Ontario

For More Information Circle No. 211 on Inquiry Card—Page 17

Three new **Ful-Vu binders** for sales presentation use now combine fully protected plastic "window sleeve" display with long-wearing Vinylhide covers with zipper closure. Made by **Cook's, Inc., Camden, N. J.**, they are available with either twin-wire or multo-ring binders. Each binder comes complete with ten 8½" x 11" plastic sleeves for 20 back-to-back exhibits. Additional sleeve can be added as desired.

Circle No. 452 on Inquiry Card—Page 17



Pencil sharpener cutter head assemblies are now available, as stock items, from **Apsco Products, Inc., Beverly Hills, Calif.** One unit, which can be stored in the same manner as typewriter ribbons, stapler refills, etc., contains cutters, cutter pins and cutter heads. Thus, when a pencil sharpener shows signs of cutter dulling, it is a simple and inexpensive job to replace just the cutter assembly rather than discarding the entire sharpener.

Circle No. 453 on Inquiry Card—Page 17

Royal Typewriter Co., New York, has announced several new appointments. N. H. Bangs, formerly district manager at Rockford, Ill., is now manager at Harrisburg, Pa. Succeeding Mr. Bangs at Rockford is Alfred Bucher, former typewriter salesman in Milwaukee. Also, in the home office, it was announced that W. W. Pennels, formerly sales training manager, is now in the new post of sales administration manager. In another move, H. J. Feaster, formerly sales policy administrator, is now assistant sales manager of Regal Typewriter Co. Replacing Mr. Pennels as sales training manager is George Rafter, former district manager at Harrisburg.

Production facilities have been established in Saybrook, Conn., by **F. G. Ludwig, Inc.,** to replace their plant which was recently damaged by fire. Shipments on certain models of Contoura-Constat portable photocopying equipment were resumed by the end of last November.

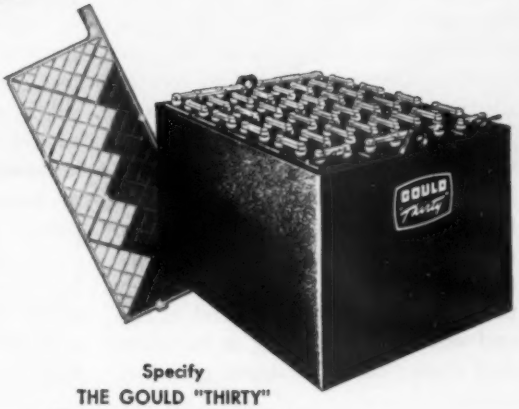
William J. Rienzi has been named southern California manager for **Old Town Corp., New York.** Mr. Rienzi was formerly national advertising manager of the San Francisco Chronicle and financial advertising manager of the New York Herald Tribune. At one time, he was also associated with Eagle Pencil Co. Mr. Rienzi will headquarter in the Old Town offices in Los Angeles.

For More Information Circle No. 212 on Inquiry Card—Page 17→

Springs into Action . . .

THANKS TO BATTERY POWER!

Battery power is the most dependable industrial truck power available today. It is amazingly efficient because it springs into action instantly, transmitting energy to the wheels with a minimum of moving parts, a minimum of friction. That's why battery-powered trucks have in-service records that are unequalled. There's *no* power like battery power. There's *no* battery power like the Gould "Thirty" with new Diamond "Z" Grids.



Specify
THE GOULD "THIRTY"
with New Diamond "Z" Grids—
America's Finest
Industrial Truck Battery

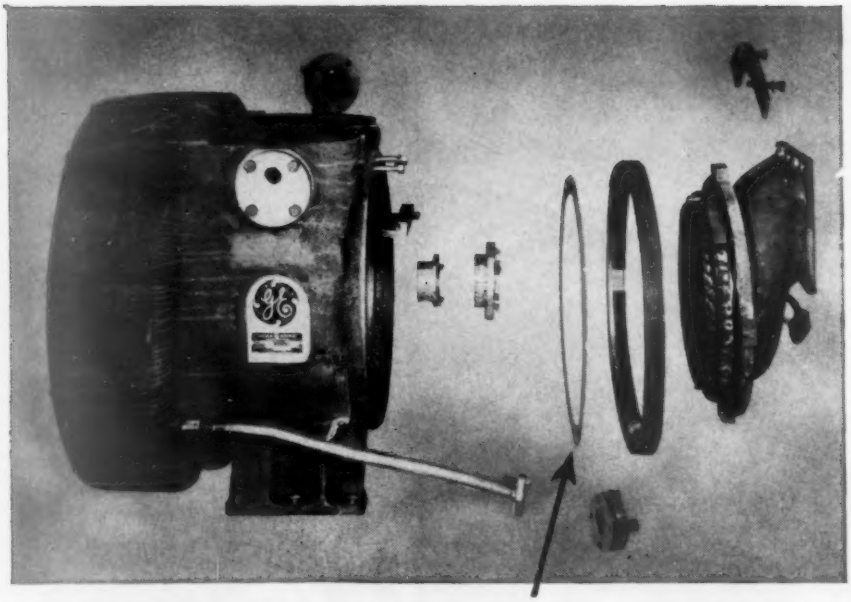
Always Use Gould-National Automobile and Truck Batteries

©1954 Gould-National Batteries, Inc.

GOULD
BATTERIES
GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.

For Railroad Air Conditioning and Lighting | For Mine Shuttle Cars and Locomotives | For Electric Industrial Trucks | For Diesel Locomotive Starting | For Standby and Emergency Power

For More Information Circle No. 213 on Inquiry Card—Page 17



LAMINUM® adjustable SHIMS

cut assembly costs on turbo-supercharger for diesel engines

THIS is only one from thousands of laminated shim applications throughout all industry. Yet the reason for using laminated shims and the gains resulting are typical. This shim sets the clearance between the nozzle and buckets on the General Electric RD3C turbo-supercharger. Shimming is essential because of the accumulation of tolerances. The laminated shim can be adjusted quickly merely by peeling—and after peeling is always precisely uniform in thickness from end to end and side to side. Peeling is far easier and faster than precision grinding which would prove quite costly on these extremely large shims.

Whenever you need shims, call the Laminated Shim Company *first*...for fast, complete service. We manufacture shims in aluminum, brass, steel—small as a fingernail and large enough for locomotives...laminated, spot-soldered or looseleaf. Produced to your own precise blueprint specifications.

For further information and free booklet telling all about laminated shims and how they're used, please write. No cost or obligation, of course. Write today!

SHIM HEADQUARTERS SINCE 1913

LAMINATED SHIM COMPANY, INC.

The name Laminum is registered with U. S. Patent Office

2401 UNION STREET, GLENBROOK, CONN.

SHIMS: custom, standard tapered roller bearing.

STAMPINGS: pilot runs.

SHIM STOCK

For More Information Circle No. 214 on Inquiry Card—Page 17

Scranton Ass'n Formed; Seeks Affiliation With N.A.P.A.

A new organization, the Scranton Association of Purchasing Agents and Buyers, has been formed. It has already made application for affiliation with the National Association of Purchasing Agents.

At the group's initial meeting, held on November 30, R. J. Campbell, first vice-president of the Elmira Association of Purchasing Agents, answered questions and made suggestions regarding membership in the national.

The following committee chairmen have been appointed: Publicity and Public Relations, R. J. Lomma, The W. L. Maxson Corp.; Program, C. A. Bowman, Wesel Manufacturing Co.; Education, J. Witowski, Daystrom Instrument; Membership, D. Dick, The Trane Company; Attendance, J. Fitzgerald, U. S. Hoffman Machinery Corp.; By-Laws, T. E. Leahy, Capitol Records, Inc.; Standardization, H. W. Morgan, Daystrom Instrument.

Conn. PAs Elect Officers

Meeting at Restland Farms, Northford, Conn., members of the Purchasing Agents Association of Connecticut recently elected their 1955 officers. The new president is Edwin E. Michaelson of Atlantic Wire Co. Other officers are: D. Norton Williams, Wallingford Steel Co., first vice president; Charles T. Harfey, Chas. Pfizer & Co., second vice president; Fred A. Harvey, secretary-treasurer; and H. Stafford Kellam, General Electric Co., Trumbull Components Department, national director.

Serving as directors are: James J. Kelly, Sheffield Tube Corp.; George J. Raiselis, Bassick Co.; Howard E. Senior, Torrington Mfg. Co.; Jack L. Hall, G. F. Heublein & Bro.; H. M. Fiske, Southington Hardware Co.; George W. Glynn, Edwards Co.; William J. Manchester, Union Mfg. Co.; and William N. Larkin, Sargent & Co.

Guest speaker at the meeting was George A. Renard, executive secretary-treasurer, N. A. P. A. Mr. Renard spoke on "From One PA to Another" to the audience of 268 members and guests. Another feature of the meeting was the election of Raymond Bingham, who recently retired from International Silver Co., to honorary membership. Mr. Bingham had served as president of the association in 1949 and as a national director in 1950.

Long Distance Rates Are Low. These are the *daytime* Station-to-Station rates for the first three minutes. They do not include the federal excise tax.

Every move you make by

LONG DISTANCE

saves time or money

Long Distance quickly puts you in touch with just about anyone, anywhere.

It eliminates "hit-or-miss" sales trips by arranging appointments in advance. Helps you keep in regular touch with out-of-town customers. Clears up questions and complaints. Simplifies buying. Speeds deliveries.

And because telephone contacts are friendly and personal, they help create a feeling of good will at both ends of the line.

To get more things done, more quickly, reach for the telephone.

Long Distance Doesn't Cost—It *Pays*

We have some specific suggestions for the profitable use of Long Distance in Sales, Purchasing, Administration, Traffic, Production, Engineering and Accounting. A call to your Bell Telephone Business Office will bring a representative to discuss them with you.

BELL TELEPHONE SYSTEM

For More Information Circle No. 215 on Inquiry Card—Page 17

A "contingent" from the Metropolitan Purchasers' Assistants Club is greeted by two charming employees of Graybar Electric Co., Inc., at the firm's Long Island City facilities. Graybar's records system is explained to visiting buyers to show the careful control kept on orders, stocks, etc.

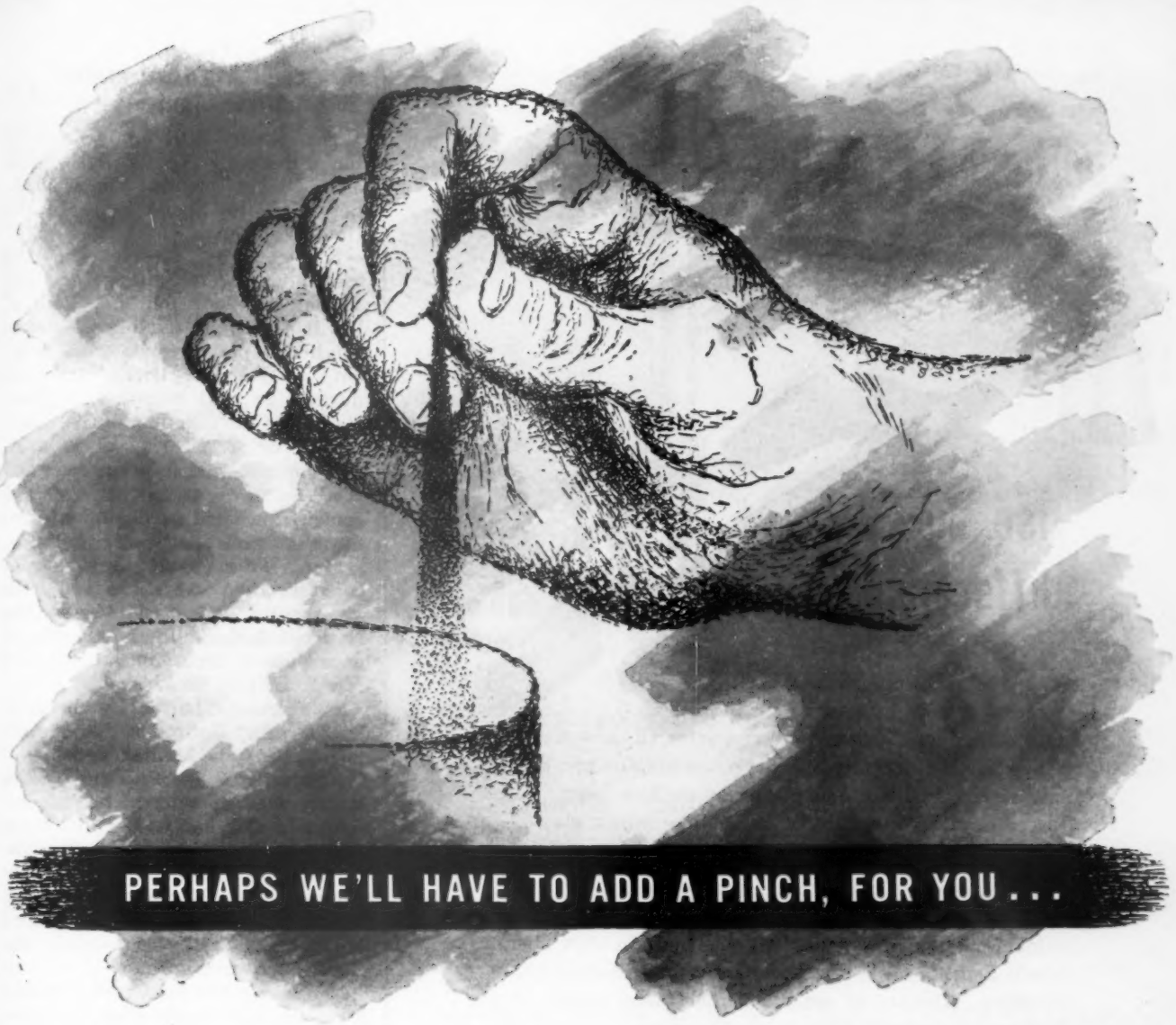
Metropolitan Purchasers Tour Graybar Electric

Members of the Metropolitan Purchasers' Assistants Club were guests, recently, at the Long Island City facilities of the Graybar Electric Co., Inc. Following a luncheon and introduction by several executives of the firm, the visitors were guided in groups throughout the large and modern electrical distribution center of the company. The selected guides carefully explained the detailed steps involved in the initiation of an order, its processing and its transmission to the incorporated warehouse facilities for filling. It was pointed out that the variety of goods handled by Graybar made it imperative that stored material be situated in the warehouse according to known demand. With more than 60,000 items listed in its catalog, common products as well as specialties, Graybar has carefully studied its warehousing problems so as to make it possible to fill orders rapidly and efficiently.

Johnson & Johnson Holds 2nd Annual Purchasing Conference

The 38 members of Johnson & Johnson and affiliated companies that recently attended J&J's second annual purchasing conference in New Brunswick, N. J., take a break during the fast moving conference activities.

The second annual purchasing conference of Johnson & Johnson and affiliated companies was held recently in the New Brunswick, N.J., headquarters of Johnson & Johnson. Beginning on a Friday afternoon, the 38 delegates attending the meeting took part in two highly geared workshop sessions. One group, with Moderator Harold L. Hogan, buyer, Johnson & Johnson, took to task the problems of packaging and their relationship to the purchasing function. Herbert Stork, purchasing agent, Personal Products Corp., guided a group discussing "Purchasing Relations With Other Divisions". At a special dinner, on Friday night, the group was welcomed by George Achenbach, vice president, purchasing, Johnson & Johnson, who explained the purpose of the conference. During the full day of activity on Saturday, after an introduction by William R. Rigney, director of purchases, Ortho Pharmaceutical Corp., the group heard Stanley C. Smoyer, assistant secretary, and John Beriont, Legal Department, Johnson & Johnson, discuss "The Legal Aspects of Purchasing". Other speakers were; Alfred W. Sutter, A. W. Sutter Associates, New York, on "Measuring the Performance of Materials Management"; "Streamlining Purchasing Forms and Systems" by Gordon Bower, sales & research development manager, and Samuel Russo, systems development manager, Moore Business Forms, Inc.; and Jerome Geisler, buyer, Personal Products Corp., on "Inventory Control". The session closed with a summary of the workshop agenda by Vincent Huether, purchasing agent, Ethicon Suture Laboratories, Inc. Companies represented at the conference were: Autograf Brush & Plastics, Watervliet, N. Y.; Chicopee Mfg. Corp., New Brunswick, N. J. and Chicopee Falls, Mass.; Ethicon Suture Labs., Inc., Chicago and New Brunswick; Johnson & Johnson, Chicago, New Brunswick and Montreal; Ortho Pharmaceutical Corp., Toronto and Raritan; Permacel Tape Corp., New Brunswick; and Personal Products Corp., Milltown N. J.



PERHAPS WE'LL HAVE TO ADD A PINCH, FOR YOU . . .

Just ask us for an alloy we haven't got — we'll be delighted.

Because that's how each of the more than 80 resistance and electronic alloys Driver-Harris makes had its beginning. Each of these highly specialized alloys is custom-made . . . produced exactly to the specifications of our customers.

The physical and chemical properties of an electrical resistance alloy can be altered greatly by a minute difference in its constituents. Often just a few ounces to the ton can make the difference you need.

One thing you can always rely on in any Driver-Harris alloy: it is made to the most precise metallurgical checks and controls known to the industry. It is these exclusive quality controls that have made Nichrome V and Nichrome* the standard for over 50 years by which all other electrical resistance alloys are measured.

Perhaps in a sense Nichrome is *too* well known. For we don't want people to forget that we make many other resistance alloys of sustained high quality to meet other special needs. And that, as we said at the outset, our engineers will be more than delighted to start afresh tomorrow to devise a new one, custom-made for you. Just tell us as exactly as you can what you wish to accomplish.

NICHROME V and NICHROME are manufactured only by

Driver-Harris Company

HARRISON, NEW JERSEY

BRANCHES: Chicago, Detroit, Cleveland, Louisville, Los Angeles, San Francisco

In Canada: The B. GREENING WIRE COMPANY, Ltd., Hamilton, Ontario.

*T. M. Reg. U. S. Pat. Off.

MAKERS OF THE MOST COMPLETE LINE OF ELECTRIC HEATING, RESISTANCE, AND ELECTRONIC ALLOYS IN THE WORLD

Use the difference

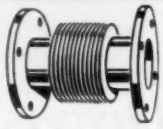
There is just as much difference in business personalities as there is in pistols. Our company, Titeflex, has a character all its own . . . shaped by the necessity of years of working on specially engineered products. You might say we have been forced to make a business of originality—which may be why it comes easiest to us.

You might find that you can make your money go further, and get the extra assistance of really original thinking on your problems, by doing business with Titeflex. You'll find, too, that it costs no more than routine handling. Why not fill out the coupon below today, and see for yourself? There's no obligation.

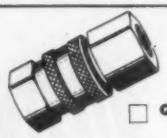
Titeflex

☐ Seamed and Seamless Metal Hose

☐ Ignition Harness and Shielding



☐ Precision Bellows



☐ Quick-Seal Couplings

Titeflex, Inc.
Industrial Products Division
513 Hendee Street
Springfield, Mass.

Please send me without cost information about the Titeflex products checked above.

Name_____

Title_____

Firm_____

Address_____

City_____ Zone____ State_____

Left—Deringer Percussion Pistol, 1843 Right—Colt Army Revolver Famous "44", 1872

For More Information Circle No. 217 on Inquiry Card—Page 17

B. C. Ass'n Celebrates Silver Anniversary

The twenty-fifth anniversary of the Purchasing Agents' Association of B. C. was celebrated on November 9 in the Social Suite of the Hotel Vancouver.

Nineteen past presidents of the association were guests on this special occasion. John M. Reid of the B. C. Sugar Refining Company, Limited, a past president and present member, reviewed activities during the past twenty-five years. He told of the founding of the Association by E. H. (Buck) Weaver, the difficulties first presented, and read extracts of importance and comedy revealed in the minutes of these early meetings.

Many letters and telegrams of congratulations were received from associations and executives of the National Association and the Canadian Council including our founder Mr. E. H. (Buck) Weaver.

Two active Charter Members, T. W. (Tommy) Bourns of Crown Zellerbach Canada Limited and Mr. J. H. Corless of White Pass and Yukon Route, were honoured when a presentation of suitably engraved trays was made by President Bob Nichols. W. N. (Walter) McPhee, of Kelly Douglas and Company, Limited, was made an Honorary Life Member, on his retirement from the Association at this time.

The November Educational Meeting was held on Tuesday, November 23 in the Hotel Grosvenor at 6 p.m. with Committee Chairman Stu Jagger presiding.

Clair Latimer, fellow member and purchasing agent for McFeely and Prior Limited, gave a very interesting talk on his recent three months buying trip to the British Isles and Western Europe.

Members were guests of B. C. Electric on Tuesday afternoon, November 9 for a tour of the Oak Ridge Transit Operations. The members were divided into two large groups headed by training supervisors and taken into the training room where actual work equipment used on transit vehicles is set up for operation under conditions that would be normally met on the city streets. Explanations were given of why accidents happen and how they can be prevented. The radio control tower was visited next. Inspectors at various points in the city have at their disposal radio equipped cars controlled by this tower. In case of breakdown on any transit vehicle, the maintenance truck or crew can be dispatched immedi-

ately and service resumed in a very short time. Several calls of this nature came in while the members were in the tower.

After seeing the safety vehicle and having an explanation of the B. C. Electric Safety Program, the groups gathered back in the transit depot where a question and answer period followed conducted by Mr. Sigmundson, general manager of Oak Ridge.

N.A.P.A. President Ahl Visits Home Association

A regular meeting of the Purchasing Agents Association of New York was held at the Hotel New Yorker on Tuesday, November 16. This annual "National President's Night" meeting featured the appearance of N.A.P.A. President G. W. Howard Ahl, and District 8 Vice President, Frank E. Whyte.

Mr. Ahl received a standing ovation from his "home association" when he was introduced. Before his address, he spoke feelingly of his beginnings in the association, and of the benefits, both personal and professional, he had derived from working with its members.

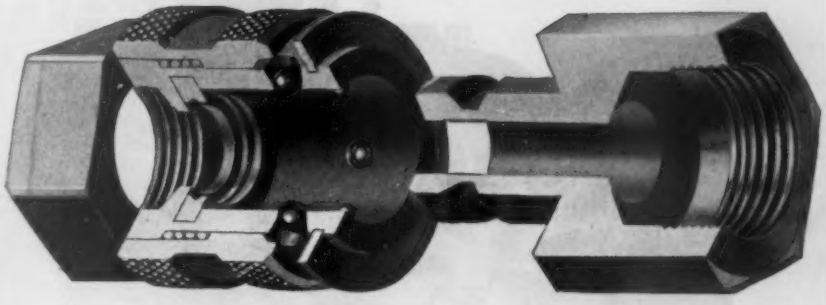
L. D. "Larry" Miles, of the Value Analysis Service of the Materials Service Department, General Electric Company, was the principal speaker at the forum session, held prior to the meeting. Mr. Miles' subject was "Using Value Analysis in Your Activity." He described GE's famous value analysis program, and illustrated his remarks with a full display of items to which the technique has been applied with outstanding results.

William F. Rae, purchasing agent for the Mennen Company, has been elected second vice-president of the association. He will serve until the annual election in June, 1955. He succeeds Frederick C. Esser, resigned.

Triple Header in Louisville

Three topics of vital interest to all PAs were taken up at a recent meeting of the Purchasing Agents Association of Louisville. The three speakers were all members of the Louisville group. Richard J. Everhart of Shuler Axle Co. analyzed the pros and cons of "Reciprocity." Nelson G. Stickley of Standard Oil Co. of Kentucky discussed problems involved in "Personal Purchases." Lee B. Dimon of Minneapolis-Moline Co. presented his ideas on "Handling of Small Orders."

...to make a leakproof connection



in one second

New, economical Titeflex QUICK-SEAL Couplings are leakproof at *all* operating pressures—provide full swivel action, full free flow, versatility, long service life—couple & uncouple IN ONE SECOND without tools. QUICK-SEAL Couplings are interchangeable in the same size; come in a variety of alloys in many sizes—¼" to 12" diameter. Straight-through, Single and Double Check-valve types. ***Write today for Titeflex*** QUICK-SEAL ***coupling catalog.***

Titeflex

Titeflex, Inc.
Industrial Products Division
513 Hendee Street
Springfield 4, Mass.

QUICK-SEAL COUPLINGS

Please send your new, free Quick-Seal Coupling Catalog.

Name_____

Title_____

Firm_____

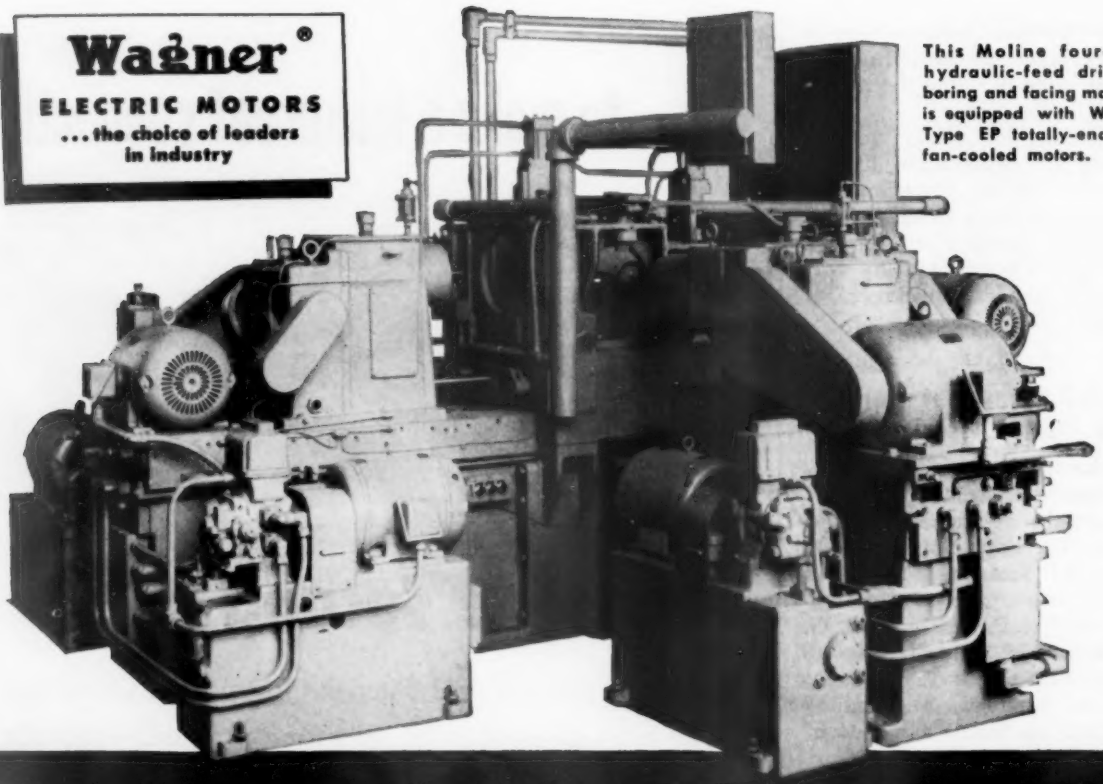
Address_____

City_____ Zone_____ State_____

The higher the pressure the tighter the seal

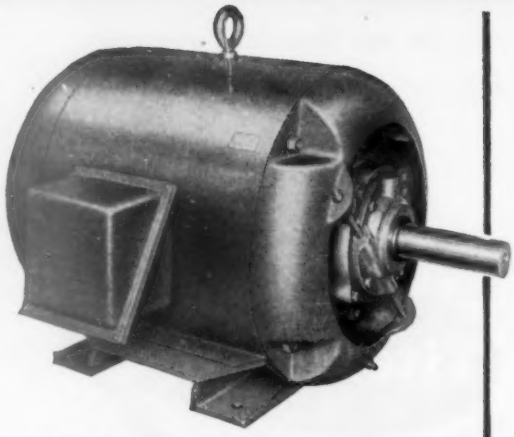
For More Information Circle No. 218 on Inquiry Card—Page 17

Wagner®
ELECTRIC MOTORS
... the choice of leaders in industry



This Moline four-way hydraulic-feed drilling, boring and facing machine is equipped with Wagner Type EP totally-enclosed fan-cooled motors.

Give your machine tools the *EXTRA ADVANTAGES* that Wagner Totally-Enclosed Motors provide



Wagner totally-enclosed fan-cooled motors are available in either steel or cast iron frame construction; in standard or explosion-proof types; single speed or multi-speed; single-phase, 2 phase or 3 phase; in ratings to 250 horsepower.

THEY ASSURE LESS DOWN TIME. Wagner totally-enclosed fan-cooled motors are *fully protected* against damage from steel filings, chips, dust, dirt, fumes and moisture. This built-in protection assures freedom from excessive down time caused by motor failure.

THEY REDUCE MAINTENANCE COSTS. Wagner totally-enclosed motors require no maintenance other than periodic lubrication. These motors are designed to run cooler and longer between maintenance periods, but when greasing is necessary, readily accessible lubrication openings permit addition of grease or a complete relubrication.

Whatever your requirements may be, there is a Wagner Motor to fit every need. Bulletin MU-185 gives full information.

Your nearby Wagner engineer can help you select the *right* motors for your applications. Call the nearest of our 32 branch offices, or write us.

Wagner Electric Corporation
EST. WE 1891

WAGNER ELECTRIC CORPORATION
6360 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

ELECTRIC MOTORS
TRANSFORMERS
INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

M55-B

For More Information Circle No. 219 on Inquiry Card—Page 17

For "Hypo" that can be depended upon to give stand-out performance, order after order, specify General Chemical.

With its characteristic high quality and uniformity, General's Sodium Thiosulfate has a reputation for giving consistently good results. And, it is available in *two* forms—from three key locations—in the East, Midwest and Pacific Coast.

So, take your choice:

CRYSTAL	ANHYDROUS
—two grades;	—water-free;
Prismatic Rice (thru 4 on 14 mesh)	Assays 97%
Selected Universal (thru 8 mesh)	Min. $Na_2S_2O_3$

But, whichever you prefer, specify General Chemical "Hypo." For prompt shipments, samples, or further information, just 'phone or write your nearest General Chemical office.

Allied Chemical

Basic Chemicals for American Industry

USES:

- **Photography**
- **Leather Tanning**
- **Drugs and Cosmetics**
- **Textiles**

...in preparing bath salts; in dyeing and printing; in manufacturing organic chemicals; in water treatment.

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport Buffalo • Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) Houston • Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New York Philadelphia • Pittsburgh • Providence • San Francisco • Seattle • St. Louis Yakima (Wash.)

In Wisconsin: General Chemical Company, Inc., Milwaukee

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

For More Information Circle No. 220 on Inquiry Card—Page 17

THIS CLEVELAND CONTAINER

made for

Heavy Duty

. . . with reinforced metal ends

The heavy wall is spirally wound, with multiple layers of high grade paperboard, closely butted and evenly bonded with adhesive to give extra strength and long use.

Moistureproof . . .

Immune to wear and tear . . . .

Self-locking metal ends.

Excellent for shipping plated metal strips, shafts, rods, tubes and many other metal parts . . . also used as cores for paper rolls and fabrics; bodies for reels; liners for metal drums.

Available in diameters and lengths as desired.

Usable for storage or reshipment.

Why Pay More? for Good Quality . . . call CLEVELAND!

The CLEVELAND CONTAINER Co.

6201 BARBERTON AVE. CLEVELAND 2, OHIO

• All-Fibre Cans • Combination Metal and Paper Cans

• Spirally Wound Tubes and Cores for all Purposes

PLANTS AND SALES OFFICES: Cleveland, Chicago, Detroit, Memphis, Plymouth, Wisc., Ogdensburg, N. Y., Jamesburg, N. J., Los Angeles • ABRASIVE DIVISION at Cleveland. SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.

Cleveland Container Canada, Ltd.: PLANTS AND SALES OFFICES: Toronto and Prescott, Ont. • SALES OFFICE: Montreal.

For More Information Circle No. 221 on Inquiry Card—Page 17

N. J. Ass'n Expands Activities

The recently formed Purchasing Agents Association of New Jersey is expanding both its membership and its activities. Membership applications now total more than 165 and only 31 of these represent transfers from other associations. Expansion of program took place at the November meeting. The association held its first round table discussion and the topic was "How to Handle Small Orders." Doing a capable job in handling discussion of this important subject was Frank Curran of S. Blickman, Inc., chairman of the Forum Committee. Guest speaker at the meeting was Stuart F. Heinritz, editor of PURCHASING.

The December meeting started off with a pre-dinner discussion of "Employee Orders." Purchases for employees present a number of problems. They take time, cost money, and can be a nuisance. On the other hand, they can contribute constructively to over-all employee morale. Interchange of ideas developed in the round table discussion of this important subject proved helpful to many of the PAs present.

Featured speaker of the evening was John L. Schwab, president, John L. Schwab Associates, Bridgeport, Conn. His topic was "The Next Ten Years for the Purchasing Agent." He discussed improved methods and designs in basic and new problems of the purchasing agent. Particularly important is the fact that purchasing and management must effectively work together in carrying out long range plans.

Past Presidents Honored by Pittsburgh Ass'n

Special recognition was given past presidents at a recent meeting of the Purchasing Agents Association of Pittsburgh. The meeting commenced with a forum on "How to Buy Repetitive Production Material." Moderators were Joseph G. Smith and James A. Callahan, both of Pittsburgh Steel Co. Following dinner, members were privileged to hear as guest speaker, George A. Renard, executive secretary-treasurer of NAPA. Mr. Renard's topic was "From One P. A. to Another."

New members of the Pittsburgh group include John W. Webb of Reymer & Brothers and Robert B. Hamilton of Alleghany Ludlum Steel Corporation.

nylon resist abrasion, no lubrication

Note the smooth, easily sterilized surfaces of these conveyor chain links molded of Du Pont "Zytel" nylon resin. They have excellent abrasion-resistance and run quietly. Resilient links of "Zytel" do not scratch products conveyed by the chains. The conveyor chain is manufactured by Fenco, Inc. of Chicago, Illinois, and is shown in operation at the Kraft food plant in Chicago. Links are molded of "Zytel" nylon resin by Du Bois Plastic Products, Inc., Buffalo, New York.

Conveyor chain links of "Zytel"* nylon eliminate oil contamination . . . are lightweight, resilient, and long-wearing

New conveyor chains, made from links molded of Du Pont "Zytel" nylon resin, assure long service life, and low maintenance costs.

The properties of Du Pont "Zytel" nylon resin which make this man-made engineering material so useful to the design engineer are pointed out by this application.

Conveyor chains of "Zytel" run without lubrication, saving the cost of lubricants, and eliminating this source of possible contamination. The "Nylite" chain is easily sterilized, and is a non-conductor of electricity.

Power costs are cut too. Tests made by the manufacturer show that the conveyor belts of lightweight "Zytel" carry, with one-fifth to one-half the chain pull, a load carried by comparable, lubricated steel chains.

Noise is reduced by quiet-running "Zytel," and products are not scratched by contact with the resilient links of Du Pont "Zytel" nylon.

Parts made of "Zytel"—gears, cams, links for example—can be mass-produced efficiently and economically by the injection molding process.

Have you investigated the unique properties of "Zytel" nylon and the other members of the Du Pont family of engineering materials—"Teflon" tetrafluoroethylene resin, "Alathon" polyethylene resin and "Lucite" acrylic resin? The applications shown here are typical product improvements—possible when design and service requirements are evaluated in terms of the properties of these versatile engineering materials. For further information on their properties and uses, clip the coupon below or write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 3311, Du Pont Building, Wilmington 98, Delaware.

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

*"Zytel" is the new trade-mark for Du Pont nylon resin

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department
Room 401 Du Pont Building, Wilmington 98, Delaware

Please send me more information on the Du Pont engineering materials checked: "Zytel" nylon resin ☐; "Alathon" polyethylene resin ☐; "Lucite" acrylic resin ☐; "Teflon" tetrafluoroethylene resin ☐. I am interested in evaluating these materials for____

_____

_____

*Name*_____

*Position*_____

*Firm Name*_____

*Type of Business*_____

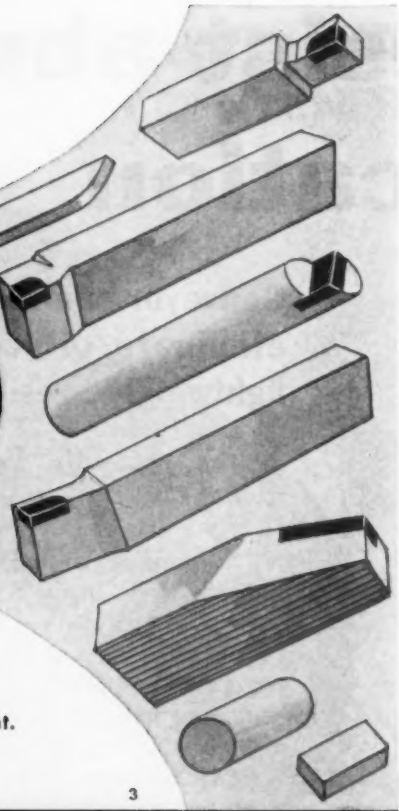
*Street Address*_____

*City*_____

*State*_____

For More Information Circle No. 223 on Inquiry Card—Page 17

EVERYTHING–
from Soup to Nuts
in Tungsten Carbide



WILLEY'S
TUNGSTEN CARBIDE
TOOLS

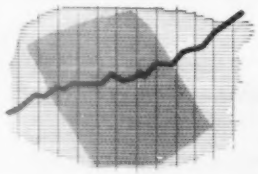
Special tools are our specialty. Send specifications or prints for prompt quotations and delivery dates. Standard tools carried in stock for immediate shipment.

Write for Catalog

3

WILLEY'S CARBIDE TOOL CO.
SOLE MAKERS OF WILLEY'S METAL
1342 W. Vernor Highway Detroit 1, Michigan

For More Information Circle No. 224 on Inquiry Card—Page 17



Everyone recognizes this
as a sign of good business...
And smart gear users know
this CINTI is the sign of
the best in custom made gears.

May We Send You Our Brochure?

CINTI ®
"Gears...Good Gears Only"

THE CINCINNATI GEAR CO. • CINCINNATI 27, OHIO

For More Information Circle No. 225 on Inquiry Card—Page 17

Iowa PAs Learn About Automatic Controls

The program of the Purchasing Agents Association of Iowa started early in the afternoon on December 14. First members toured Plant No. 2 of the Maytag Co. and learned how washing machines were mass produced. Then they met at the Newton Country Club and participated in an educational forum and discussion on "Purchasing for Profit."

Following an excellent dinner, they listened to a talk by L. W. Herchenroeder of the Westinghouse Electric Co. on "Automatic Control in Industry." The speaker pointed out that although many of the elements for fully automatic control are available or being developed, much remains to be learned before automatic production becomes a reality.

Members of the Iowa Association are now looking forward to their January program since it promises to be a good one. Guest speaker will be John H. Moninger. He is a member of the executive staff of the American Meat Institute and secretary of the National Meat Canners Association.

Washington Manufacturers and Distributors Night

More than 600 purchasing agents, manufacturers, sales managers, engineers and other business executives were present for the 25th Annual Manufacturers' and Distributors' Night meeting of the Purchasing Agents Association of Washington.

Dean Smith, purchasing agent, Sumner Iron Works, Everett, and president of the Purchasing Agents Association of Washington, presided, while Charles V. Tinker, salesman and former purchasing agent, William O. McKay Co., and a past president of the State purchasing association, was toastmaster. There were no formal speakers.

Honored guests at the head table included: Allan Pomeroy, Mayor of Seattle; C. Arvid Johnson, Mayor of Everett; S. E. Stretton, president, Seattle Chamber of Commerce; Charles M. Fogg, president, Tacoma Chamber of Commerce; V. W. Haskill, president, Seattle Association of Credit Men; Richard M. Black, president, Seattle Construction Council; Trevor Evans, president, Seattle Sales and Advertising Club; James B. Scroggs, president Sales

(*Please turn to page* 194)

QUALITY MASS PRODUCED!

LINEAR ROTO-MOLDED "O" RINGS

Now, for the first time, you can use precision-made compression-molded "O" Rings, with all their superior features, at prices competitive with injection or transfer molded "O" Rings!

LINEAR'S new, exclusive high-speed ROTO-MOLDING process introduces automation to "O" Ring manufacturing assuring more precise controls than ever before possible by any molding method. LINEAR ROTO-MOLDING guarantees closer tolerances, flash-free finish, greater tensile strength, uniform curing and freedom from contamination.

Never before have "O" Rings of this quality been available at mass production prices!

LINEAR ROTO-MOLDED "O" Rings come in a wide variety of standard sizes and materials, as well as special types for unusual applications. Get the facts now!

"PERFECTLY ENGINEERED PACKINGS"

LINEAR

LINEAR, Inc., STATE ROAD & LEVICK ST., PHILA. 35, PA.

For More Information Circle No. 226 on Inquiry Card—Page 17

UDYLITE ANNOUNCES

A NEW, SUPERIOR BARREL PLATING CYLINDER

MADE OF TEMPRON HARD RUBBER

WITHSTANDS, EVEN UNDER LOAD, THE HIGHEST TEMPERATURES USED IN PLATING

•

HAS GREATER RESISTANCE TO ABRASION

WITHSTANDS STRONGER ACIDS

•

CAN BE USED EFFECTIVELY THROUGH THE ENTIRE PLATING CYCLE

ANOTHER UDYLITE FIRST!

After months of research and testing in actual production, Udylite is proud to present a new plating barrel made of Tempron hard rubber.

Users of horizontal plating barrels have for years desired a cylinder made of such a material that would withstand the highest plating temperatures—chemical resistance to a wide variety of corrosive solutions—strength to handle heavy loads and a material that would perform satisfactorily through the complete cycle of operations.

Such a material was found in Tempron hard rubber. It resists most inorganic chemicals and it also has good resistance to many organic chemicals which attack hard rubber, soft rubber and plastics.

Using this material, Udylite's design (patent pending) and construction now give all the features long desired by the plating industry. Udylite's new construction with its interlocking panels and ribs gives the advantage of "one-piece" construction plus the added feature that the panels, ribs, rails and cylinder heads are individually replaceable.

Udylite Tempron cylinders are so designed that they can replace existing types of cylinders in Udylite Barrel equipment.

If you are interested in receiving a sample of Tempron hard rubber for a test in your solutions, or a chart showing the chemical resistance of Tempron, write today to—

WORLD'S LARGEST PLATING SUPPLIER

WORK TRAINING

THE Udylite CORPORATION

DETROIT 11, MICHIGAN

(Continued from page 192)

Executives Club of Seattle; Dave Deits, president, Industrial Traffic Managers' Association; Oliver R. Anderson, president, Transportation Club of Seattle; L. C. McIver, president, Electric Club of Washington; William Forehand, president, Seattle Chapter, National Office Management Association; Elizabeth F. Wing, president, Women's Group, Purchasing Agents Association of Washington; R. G. Nichols of Vancouver, B. C., president, Purchasing Agents Association of British Columbia; Harold E. Bloyd of Portland, president, Purchasing Agents Association of Oregon; John Burrows of Spokane, president, Inland Empire Group, Purchasing Agents Association of Washington and Donald G. Markley, chairman of Tacoma Group, Purchasing Agents Association of Washington.

Purchasing agents in charge of arrangements for this event were: Arthur Erickson, Union Oil Co. of Calif.; H. Gordon Ainslie, Barde Steel Co.; H. W. Biedel, Pennsylvania Salt Mfg. Co., Tacoma; Norman A. Gilbertson, Consolidated Dairy Products Co.; Paul R. Hendricks, City of Seattle; L. C. McIver, Puget Sound Power & Light Co.; M. C. Staley, A. M. Castle & Co.; Harry I. Thorson, Crown Zellerbach Corp. and Earl C. White, Washington Purchasing Agent and Manufacturer.

* * *

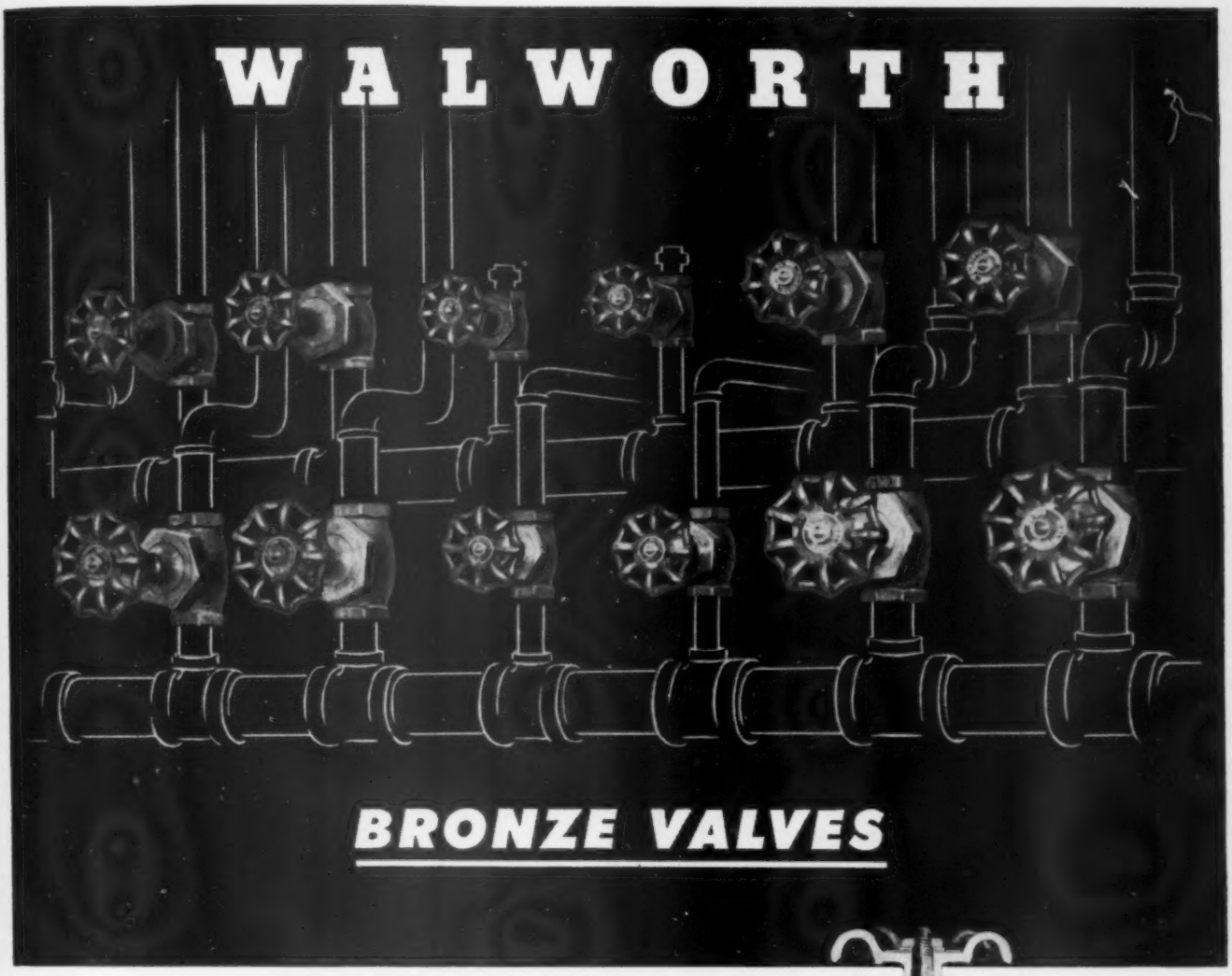
Fay Le Meadows Addresses Milwaukee Association

Members of the Milwaukee Association of Purchasing Agents were privileged to have as guest speaker for their December meeting, Mr. Fay Le Meadows. Mr. Meadows is pastor of Shiloh Congregational Church in Dayton, O. and is well known for his lectures, writings and broadcasts. His topic at the Milwaukee meeting was "Walk Toward the Rainbow."

Complete confidence in the economic future of the United States was expressed by Dr. Phillip Wernette, professor of business administration, University of Michigan, at the November meeting of the Milwaukee Association. In his address, "The Future Prosperity of Dynamic America," Dr. Wernette described some of the factors which will contribute to the future economic growth of our country including population increases, technological advancement, etc.

For More Information Circle No. 186
←on Inquiry Card—Page 17

WALWORTH

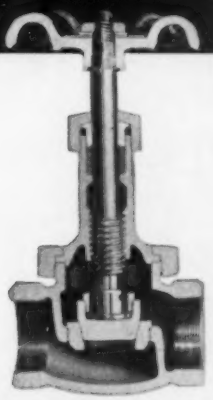


BRONZE VALVES

Better because ... **Walworth has standardized its line of bronze valves to provide an unsurpassed system of interchangeability of parts for assembly or replacement. You can maintain a great number of Walworth Bronze Valves with a small inventory of basic parts . . . you minimize part replacement problems. For further information, ask us for our Bronze Valve Standardization Chart.**

Choose from complete lines of Walworth Bronze Valves – including gate, globe, angle, check, and lubricated plug types. Walseal® Bronze Valves and Fittings are also available for making silver-brazed joints.

For full information on Walworth Bronze Valves and Fittings, call your Walworth Distributor, nearest Walworth Sales Office, or write to Walworth Company, General Offices, 60 East 42nd Street, New York 17, N. Y.



Parts are carefully machined and finished to close tolerances, thereby assuring accurate fit and alignment under all conditions. Sectioned valve is Walworth No. 225P *Bronze* Globe Valve with stainless steel plug-type seat and disc, heat-treated to a minimum of 500 Brinell hardness.

WALWORTH

Manufacturers since 1842

valves . . . pipe fittings . . . pipe wrenches

60 East 42nd Street, New York 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

For More Information Circle No. 230 on Inquiry Card—Page 17

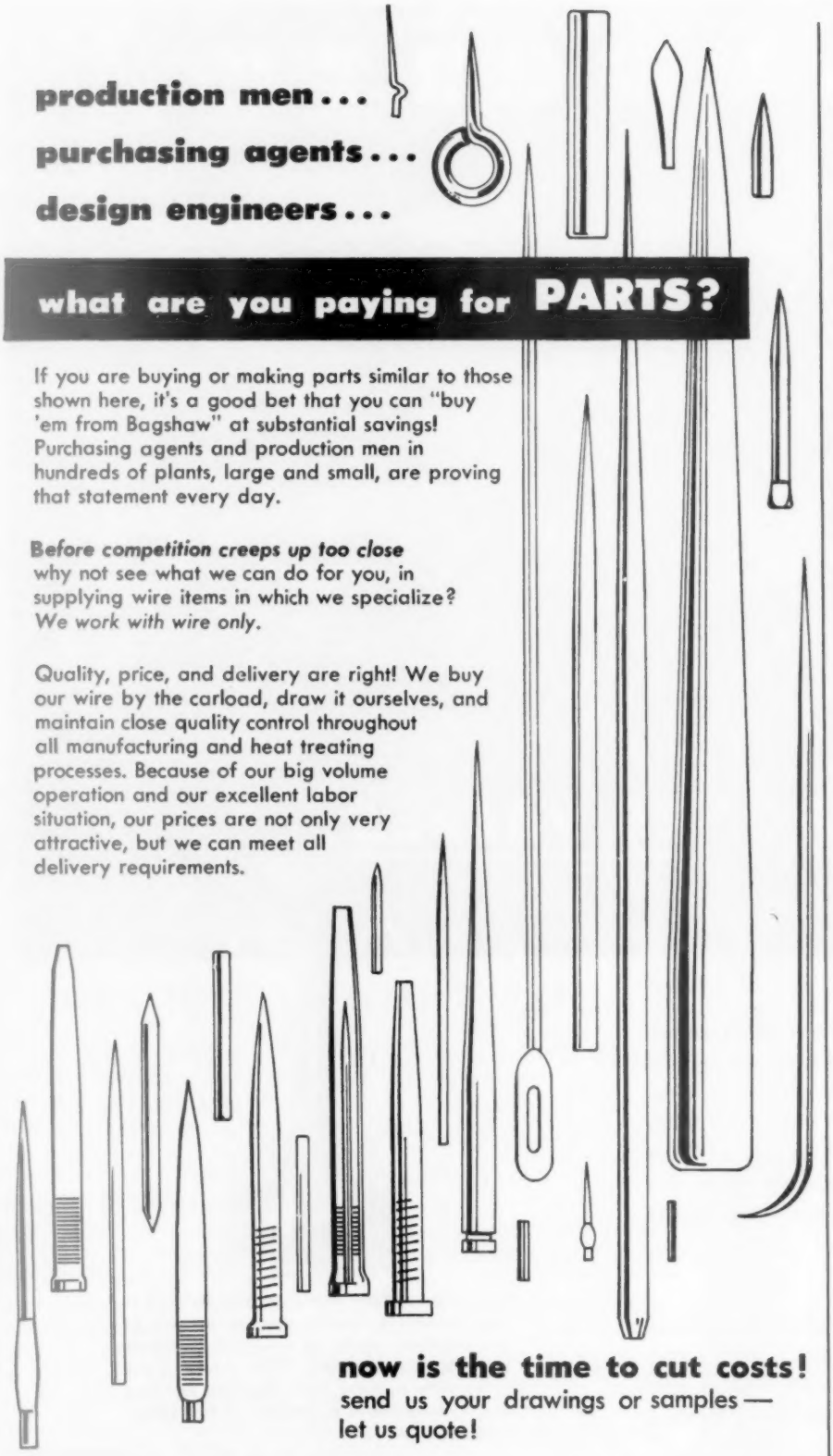
production men...
purchasing agents...
design engineers...

what are you paying for PARTS?

If you are buying or making parts similar to those shown here, it's a good bet that you can "buy 'em from Bagshaw" at substantial savings! Purchasing agents and production men in hundreds of plants, large and small, are proving that statement every day.

Before competition creeps up too close why not see what we can do for you, in supplying wire items in which we specialize? *We work with wire only.*

Quality, price, and delivery are right! We buy our wire by the carload, draw it ourselves, and maintain close quality control throughout all manufacturing and heat treating processes. Because of our big volume operation and our excellent labor situation, our prices are not only very attractive, but we can meet all delivery requirements.



now is the time to cut costs!
send us your drawings or samples — let us quote!

B Co.

W. H. BAGSHAW CO., Inc., 55 Pine St., NASHUA, N. H.
Established 1870
Oldest and largest plant of its kind in America.

for pointed, square-cut, or formed wire goods
***buy 'em from* BAGSHAW**

For More Information Circle No. 231 on Inquiry Card—Page 17

St. Louis Association Ready for Third District Conference

Final arrangements are now being made for the NAPA Third District Conference to be held at the Jefferson Hotel in St. Louis, January 13-14. A galaxy of nationally prominent speakers is promised by the program committee. Among those on hand will be G. W. Howard Ahl, Chet Ogden, Andy Andrews, and George Renard. In addition there will be prominent leaders in the general business and professional world to pass on their ideas to the large group of PA's expected to attend.

On December 11, members of the St. Louis Association enjoyed their thirty-first annual Christmas party at the Hotel Chase. Featured was dinner, dancing, attendance prizes, and gifts for the ladies.

Dayton Ladies' Night

Members brought their wives along with them to the December 2 meeting of the Purchasing Agents Association of Dayton. Mr. Fred Hardenbrook, district manager, Dictaphone Corp., showed and narrated a color film he took in Dutch Guiana. Mr. Hardenbrook is the only white man to have successfully (by returning alive) explored parts of the Guiana jungle. Needless to say, his film and comments were of keen interest to the audience. This meeting also featured entertainment by the Chorussaires, a thirty voice group from the Dayton Y.M.C.A. Their after-dinner numbers were very much enjoyed.

Dayton PAs have an outstanding lineup of speakers in store for them during the balance of the 1954-55 year. On January 11, the guest speaker will be NAPA President Howard Ahl. On February 10, Andrew M. Kennedy of Westinghouse Electric and chairman of the NAPA Steel Committee will be on hand for Past Presidents' Night. March 9 the Dayton Association will meet jointly with the American Society for Metals. The two groups will hear a talk on "Metal Purchasing Specifications" by Charles M. Parker, vice-president, American Iron & Steel Institute. Executive Night will be on April 12 and the guest speaker will be Stuart Heinritz, editor of PURCHASING. There will also be a feature products exhibit at this meeting. There will be a members only meeting on May 12 and June 9 is down for the annual picnic and golf party.

YOU CAN COUNT ON CONTINENTAL FOR EVERY FASTENER NEED!

Continental Produces Over 1,756,000 Styles and Sizes of Standard Screws Alone!

Continental offers you a greater selection than any other fastener producer

The vast inventory of fastenings offered by Continental is proof that you can always count on Continental for every fastener need. Whether your demands are for special or regular units, you will be assured of the best fastener for your job and of fast service, too.

You will profit by putting this operation to work for you. The Continental Screw Company's design engineers and production specialists offer you the benefits of over 50 years experience and know-how.

Continental Screw Co.

Manufacturers of Holtite Fastenings

NEW BEDFORD, MASSACHUSETTS, U. S. A.

For More Information Circle No. 232 on Inquiry Card—Page 17

APEX has the tools you need to drive Phillips screws

(and Frearson, Slotted, Clutch Head or Socket Head screws, too!)

Using Phillips screws on your fastening operations? Then you'll want to know more about Apex tools for driving Phillips screws.

Power bits, bit holders and insert bits, hand drivers, service drive bits, offset drivers, hand brace bits—Apex has them all, for all sizes of Phillips screws.

For production screwdriving, using air or electric power tools or manual methods, there's an Apex tool exactly fitted to your requirements. Catalog 21—the authority on screwdriving—can help you. Write, on your company letterhead please, for your copy.

APEX screwdriving tools

THE APEX MACHINE & TOOL CO.
1034 Patterson Blvd. • Dayton 2, Ohio

For More Information Circle No. 233 on Inquiry Card—Page 17

L. A. PAs Hear Talk by Sports Columnist

The November dinner meeting of the Los Angeles Purchasing Agents Association featured a variation from programs dealing with strictly purchasing and business topics. Guest speaker was Dick Hyland, well known sports columnist and former Stanford football All-American. Mr. Hyland, who writes "The Hyland Fling" which appears in the Los Angeles Times, spoke on the sports outlook. This particular meeting was well attended by sports conscious sons of members who accompanied their dads.

A brand new plant of Lever Brothers was visited by members of the Los Angeles Association recently. Handling arrangements for the visit were Carl Hobson, W. Boyd Moon, and William Moke.

The educational committee hasn't been idle. A seminar on "Practical Purchasing—Examination and Evaluation of Purchasing Cases" was conducted at the University of Southern California. Serving as panel chairman was Comdr. H. H. Blackman, U. S. Navy purchasing office. Panel members were: Orval Berry, Hughes Aircraft Co.; D. B. Kitchel, Kaiser Steel Corp.; Kenny Dale, Signal Oil & Gas Co.; and Phil Rypinski, Square D Co.

The Los Angeles group held a recent luncheon meeting at the Phelps Dodge Copper Products Corp. Guest speaker was Roy Hagen, president of California Consumers Corporation and past president of the Los Angeles Chamber of Commerce. His topic was "A New Adventure in Business."

Syracuse Ass'n Meeting

Keeping pace with the National Standards Association conference in New York the same week, topic at a recent meeting of the Purchasing Agents Association of Syracuse and Central New York was "Standardization, A Tool of Purchasing." William Bowes, chairman of the Association's Standardization Committee, headed the panel. Other forum members included: C. W. Goodman, Union Carbide Corp. and head of the 8th District NAPA Standardization Committee; Philip Kalen, standards engineer, Eastman Kodak Co.; and R. N. Stenerson, director of material standards, Carrier Corporation. Thus members had the golden opportunity to learn "How can small business use a standardization program?"

. . . top quality service from SPANG® "CW" STEEL PIPE

Colorado College, founded in 1874 at Colorado Springs, is the oldest college in the state. Daily temperatures around this area, situated over a mile above sea level in the Rocky Mountains, vary on an average of 30°F, and put more than ordinary service requirements on a heating system.

This temperature variation was taken into consideration when the college's new men's dormitory was planned. A dependable, all-season heating system was needed, and SPANG CW Steel Pipe was specified for the installation . . . not only for heating, but for the plumbing system as well in this 94-room building.

Why is SPANG CW considered tops in its field? The answer is **quality control.** Only *top-quality* skelp goes into the making of SPANG CW. Close control is maintained during forming. The finished pipe is thoroughly tested and inspected before shipment. Such care in pipe-making at SPANG assures users of *top-quality* pipe that is easy to cut, bend, thread and weld . . . and this means faster, lower-cost installations.

SPANG CW Steel Pipe is your best bet for every type of plumbing, heating, air conditioning, radiant heating and snow melting installation. You can get *top-quality* SPANG CW from your local SPANG Distributor. And he will give you *top-quality* service, too!

Owner: Colorado College, Colorado Springs
Architects: Edward L. Bunts, A.I.A.; F. Lamar Kelsey, A.I.A., Colorado Springs
Contractor: M. W. Watson, Topeka, Kansas
Plumbing and Heating Contractor: Benbow Plumbing & Heating Co., Colorado Springs
SPANG Distributor: Colorado Springs Supply Co., Colorado Springs

SPANG-CHALFANT
DIVISION OF THE NATIONAL SUPPLY COMPANY
General Sales Office: Two Gateway Center, Pittsburgh, Pennsylvania District Sales Offices: Atlanta, Boston, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis.

For More Information Circle No. 236 on Inquiry Card—Page 17

LOWELL
Reversible Ratchet
SOCKET WRENCH

Everything you need in a reliable socket wrench:

1. **Strength** from the great crushing action of special heat-treated steel pawls . . . high tensile alloy handle . . . cap is all steel, not cast.
2. **Safety** from its strength . . . also, socket is held securely by snap ring and can't slip.
3. **Speed** gained through ease of handling—there is no lost motion.

Send for catalog 60-*A* showing our full line.

LOWELL WRENCH CO.
WORCESTER 8, MASS.
L-10

For More Information Circle No. 237 on Inquiry Card—Page 17

AMERICAN
Tubular and Split
RIVETS

. . . In all metals, all styles, for all industrial applications.

Write for price list.

AMERICAN RIVET COMPANY
849 N. Kedzie Ave., Chicago 51, Ill.

BUY AMERICAN...Tubular and Split Rivets...

For More Information Circle No. 238 on Inquiry Card—Page 17

Three Tickets Up in Twin City Elections

Members of the Twin City Association of Purchasing Agents will have their choice of three party slates at the annual election of officers which will be held on January 12. On the "Wildcat" ticket there is Fred Morlock for president, Bill Bloedow for vice president, and Al Boesel and Clarence Smith for local directors. The "Panther" party has put up Paul Hasselman for president, R. C. Duncan Jr. for vice president, and Bill Bunin and Bob Culp for local directors. The "Lions" will offer Chuck Scanlan for president, Roger Jobes as vice president, and Gerry Goulet and Mal Maples as local directors. Wayne Hamlett as treasurer and Cliff Berg as secretary seem like shoo-ins—they're carried on all three tickets.

As is the custom, members brought one or more gifts for distribution to underprivileged children to the December meeting. The donations were turned over to the Holiday Bureau, a division of the St. Paul Community Chest.

Topic of the meeting was "Standardization." Guest speaker at the dinner meeting was R. C. Sogge, manager of standards, Engineering Services Division, General Electric Co. Mr. Sogge told members how to set up and operate a standardization program in his talk, "Standardization and the Purchasing Agent."

Scranton Ass'n Elects Officers

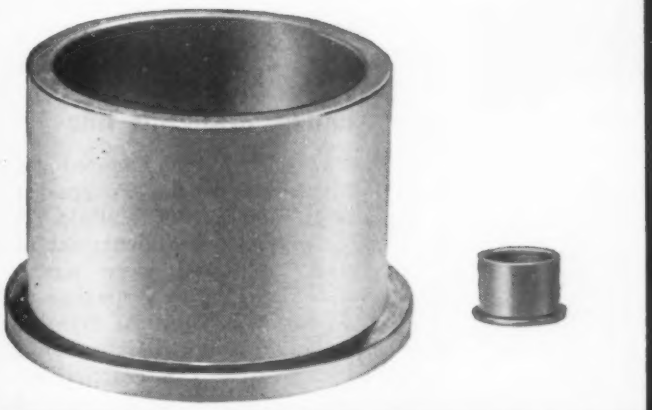
John V. Hennigan of Daystrom Instrument Co. was elected president of the Purchasing Agents Association of Scranton at a recent dinner meeting. Other new officers include: J. G. Brandamore, General Electric Co., first vice president; C. A. Bowman, Wesel Manufacturing Co., second vice president; Ralph J. Lomma, W. L. Maxson Co., third vice president; Ralph A. Lewis, International Correspondence Schools, secretary; G. Malosh, Bittenbender Co., treasurer, and Ralph R. Rhodes, U. S. Hoffman Co.; Walter Golden, Consolidated Molded Products Co., and Ralph Kerr, Bendix Aviation Corp., directors.

Guest speaker was Harold Hollister, director of purchases, Ingersoll-Rand. Mr. Hollister was the first president of the Purchasing Agents Association of Elmira and he spoke on membership in the National Association.

GRAMIX

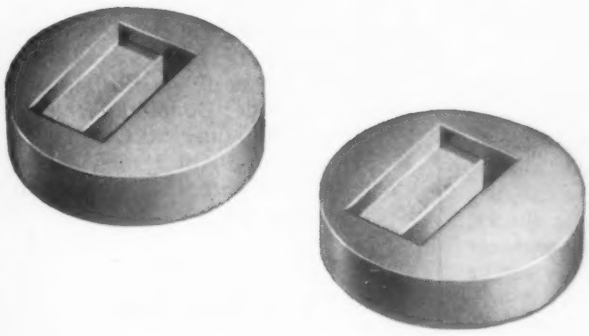
PRODUCED TO EXACTLY MEET ANY REQUIREMENTS

large and small pieces

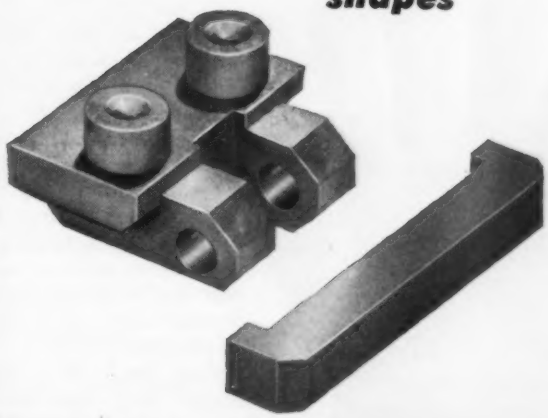


open or close tolerances

single and multiple compositions



simple or complex shapes



104

GRAMIX sintered metal bearings and parts can be produced to meet an extremely wide variety of applications and specifications. Even intricate shapes of close tolerances save considerable money as against similar parts machined from bar stock. With simple compositions and shapes not close in tolerance the costs are amazingly low. In addition our competent engineers will study the prints you submit and recommend the correct composition and design considerations to most practically and economically manufacture your parts. There is no obligation for this service, of course. Write for data book.

OUR 100th YEAR

THE UNITED STATES GRAPHITE COMPANY

DIVISION OF THE WICKES CORPORATION • SAGINAW, MICHIGAN

For More Information Circle No. 239 on Inquiry Card—Page 17

YOUR MEN'S HANDS MEET WORSE DANGERS EVERY DAY

Hand injuries are the most frequently reported. Let Jomacs keep your men's hands safe. Send for full information today.

Dangerous as a tiger's fangs—sharp metal can slash, cut, tear or rip unwary hands. The cost can be shockingly high! Pile up lost man-hours and lost production, top them off with soaring insurance premiums, and you'll see what we mean.

Remedy: Jomac® Work Gloves wherever there's a hand hazard. Jomacs *look* soft and fluffy, but they're made of tough, thick, twisted-loop fabric that armors the hands against injury. They're astonishingly resistant to cuts, abrasion, bruising shocks, heat and cold. And they actually outwear common work gloves by **900%**. They can be cleaned many times.

Want better safety records and lower insurance rates? Get them at low cost—with long-wearing Jomacs. We'll be glad to send you our new catalog. Just tell us your address and be sure to ask about a trial order. JOMAC INC., (formerly C. Walker Jones Co.) Dept. F, Philadelphia 38, Pa.

It pays to keep Jomacs on hand!

JOMAC

INDUSTRIAL WORK GLOVES

Outwear ordinary work gloves by 900%

PLANTS IN PHILADELPHIA, PA., AND WARSAW, IND.

For More Information Circle No. 240 on Inquiry Card—Page 17

G. A. Renard Addresses Rochester Association

Featured speaker at the November 17 meeting of the Purchasing Agents Association of Rochester was George A. Renard, executive secretary-treasurer, NAPA. A brilliant speaker and economist, Mr. Renard was well qualified by his "dollar-a-year" activities and other duties as a consultant to the government to speak on the effects of stockpiling on our economy. Mr. Renard feels that the next 25 years will be the most interesting and challenging the purchasing executive has ever faced. The economic picture is changing rapidly and purchasing now has come into its own as a member of management.

Buffalo Presidents Nite

Past presidents were honored at a recent meeting of the Purchasing Agents Association of Buffalo. 18 of 26 living past presidents sat at a special table and were served special cakes. Featured speaker at the meeting was Fred A. Manske, vice president, National Gypsum Co. He spoke on "The Construction Industry." He described current trends in building and predicted that, with population growth and continued prosperity, high construction activity would continue to be a bouyant force in our economy. Following Mr. Manske's talk, the film, "White Magic," was shown. Members learned how gypsum was mined and something about its many applications in the building industry.

New members of the Buffalo Association include: Donald E. Whelan, Pittsburgh Metallurgical Co.; James E. Shannahan, Pivot Punch & Die Corp.; and Leonard J. Chisholm, Curtis Screw Co.

R. I. Ass'n Meets

Featured speaker at the November 22 meeting of the Rhode Island Purchasing Agents Association was Wallace G. Strathern. Mr. Strathern is director of training, Eastern Gas & Fuel Associates, Boston. His topic was "How to be Human on the Job." Members picked up many valuable tips on human relations from this talk.

New members of the group include: Frederick G. Heeley, Little & Co.; Waldron M. Huftalen, Grinnell Corp.; and Thomas D. Maloney, Trifari, Krussman & Fisel Co.

Satisfaction rests on the carton

Your dealer relations can be strengthened by your shipping container. Fewer complaints from retailers and distributors. Less home office handling. Fewer adjustment hours for route men. Less write-off of merchandise. These are among the reasons why Brillo Mfg. Co., Inc. and other trade-conscious manufacturers have selected Union as one of their major suppliers of corrugated boxes.

TRADE MARK UNION
INTEGRATED PLANNING
INTEGRATED PRODUCTION

UNION BAG & PAPER CORPORATION

CORRUGATED CONTAINER DIVISION • Box Plants: Savannah, Ga., Trenton, N. J., Chicago, Ill.

Eastern Division Sales Offices: 1400 E. State St., Trenton 9, N. J. • Southern Division Sales Offices: P.O. Box 570, Savannah, Ga.
Western Division Sales Offices: 4545 West Palmer, Chicago 39, Ill. • Executive Offices: Woolworth Bldg., New York 7, N. Y.

For More Information Circle No. 241 on Inquiry Card—Page 17

How to Save on STAMPINGS

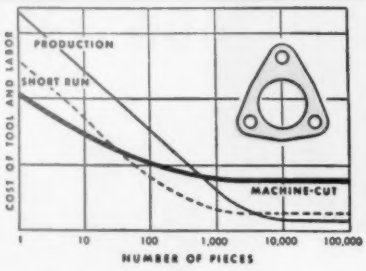
A COST-SAVING, VERSATILE APPROACH TO THEIR MANUFACTURE

Possibly you've always thought that a quick look at the quantity involved decides how a stamping shall be made. Sometimes it is done that way but it isn't the sure way to lowest costs.

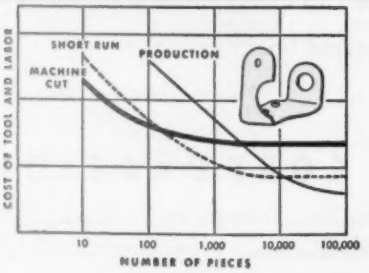
A more scientific approach by the STAMPINGS DIVISION of the Laminated Shim Company in Glenbrook, Connecticut frowns on the term "short run stamping." There is what is known as the short run *method* but there is no definite dividing point between short run and production quantities. Contour, tolerances, material, many other items all affect the manufacturing method when costs are being carefully figured.

NO ONE METHOD IS ALWAYS CHEAPEST; THREE ARE NEEDED

Machine-Cut Method: The STAMPINGS DIVISION goes one step further than Short Run and Production Methods. The Machine-Cut Method, though not strictly a stamping operation is a valuable addition to stamping procedure. Custom built slitters, cutters, saws and files use experience-gained techniques to fashion the smaller quantities of parts. No dies are made; only stock punches are used. Obviously labor cost is understandably high but there is no tool charge.



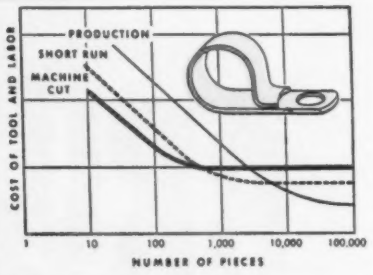
Short Run Method: As quantities increase (and depending upon the complications of contour, material, etc.) the economy of a temporary blanking die must be considered to eliminate the labor expense of machine-cutting. When this point is reached, manufacture is by the Short Run Method and the blanking is supplemented by other bench press operations. Here labor cost is at a medium level but a modest tool charge is incurred.



Production Method: As quantities increase the Production Method using standard dies with high speed automatic presses becomes more attractive. A relatively high tool charge can then be amortized over a great number of parts. Labor charge is negligible.

The Production Method as developed by the STAMPINGS DIVISION is offering unusual cost saving possibilities because of the new low-cost, full service Hecht-type die developed by the company for certain applications.

It is interesting to note that sometimes a very small quantity of parts would require a standard die because of complications or close tolerances or tough materials involved. Thus occasionally a very small quantity goes into the production classification.



LOWEST COST IS ASSURED WHEN SUPPLIER HAS ALL THREE METHODS

The illustrations show typical stamped parts along with relative costs and breaking points for each of the three manufacturing methods. Unless a supplier can offer all three, his costs cannot always be low. For a given quantity, only *one* method can be most economical.

ONE OR ONE MILLION PARTS FROM SAME SUPPLIER

An important corollary to the above is that an experimental part in small quantities can be handled by the same supplier when full production quantities are needed.

Further, it is important that a supplier be fully informed, if possible, on later or total requirements for a given part. As the charts point out, such information will affect manufacturing method and make possible cost reductions.

FURTHER INFORMATION AVAILABLE

An illustrated 12 page brochure describing in greater detail the methods mentioned above is available on request to the

STAMPINGS DIVISION
Laminated Shim Company, Inc.
2401 Union Street, Glenbrook, Conn.

For More Information Circle No. 242 on Inquiry Card—Page 17

Howard Ahl Speaker at New Orleans Meeting

Speaking on the subject of public relations for the purchasing agent at a recent meeting of the Purchasing Agents Association of New Orleans was NAPA President G. W. Howard Ahl. In addition, members heard an excellent report on the NAPA Seventh District Conference by their own Vice President Walter G. Joyce. Mr. Joyce also stressed the importance of the education program of each association.

Mr. Robert Elasser, an economist and regular monthly speaker at New Orleans meetings, predicted that prices would remain stable for 1955 and on into 1956. Government spending will decline but local spending will increase. Easy credit, an upturn in production, and increase in employment are also likely.

New members of the association include: Paul G. Smith, Kaiser Aluminum & Chemical Co.; C. F. Spencer, Kaiser Aluminum & Chemical Co.; Gus Olsen, Metal Goods Co.; David Ashr, Oronite Chemical Co.; E. A. Landry, O. H. Van Horn Co.; and E. B. O'Connor, Sefton Fibre Can Co.

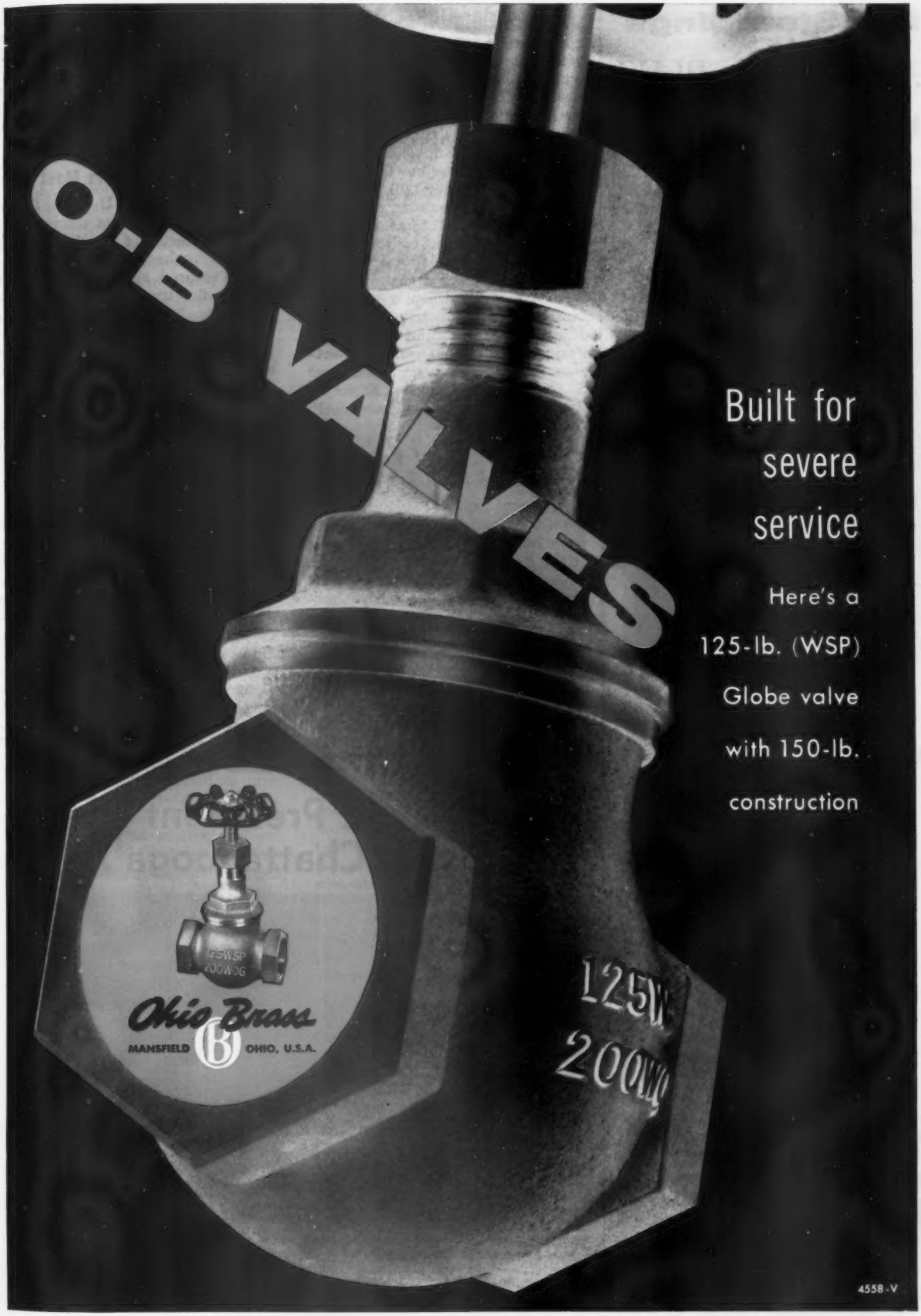
On December 13, the association held its "Christmas Get-To-Gether Party" at the St. Charles Hotel. There was a drawing for gifts which included two 50 yard line Sugar Bowl tickets.

* * *

Northern Cal. Federal Buyers

The "Know Your Federal Agency" series for the November meeting of the Federal Procurement Officers Association of Northern California featured the "Federal Bureau of Investigation." Following an informative talk on this very important—and probably best known—bureau in the Department of Justice, members heard a talk by Mr. Paul M. Klein, Jr. Mr. Klein is a patent attorney in the Office of Naval Research and his topic was "Patents and Copyrights." Needless to say, this was a subject of great interest and potential usefulness to members.

FOR FURTHER INFORMATION ON PRODUCTS IN THIS ISSUE PLEASE USE INQUIRY CARD ON PAGE 17


O-B VALVES
Built for severe service
Here's a 125-lb. (WSP) Globe valve with 150-lb. construction
125WSP
200WOG
Ohio Brass
MANSFIELD OHIO, U.S.A.
125W
200W
4558-V

For Stampings

...look for the PLUS **beyond** the PRICE!

delivery for instance!

Think what it costs when your stampings aren't delivered on time.

Remember that *prompt delivery* – with a 39-year record to prove it – is just one of the plusses you get when you buy *Detroit* stampings.

Look for the plusses *beyond* the price the next time you buy stampings!

And be sure to try DETROIT

DETROIT STAMPING COMPANY

DE-STA-CO

408 Midland Ave., Detroit 3, Mich.

"America's Best-Known Jobbing Stampings Manufacturer"

For More Information Circle No. 246 on Inquiry Card—Page 17

Wisconsin NIGP Chapter

Election of officers was one of the events at a recent meeting of the Wisconsin Chapter of NIGP. Re-elected were Andrew L. Lehrbaummer, president; Carl E. Peters, secretary-treasurer; and Joseph V. Duffy, vice president. The Wisconsin Chapter is justly proud that one of its members, Barney Gill, city purchasing agent of Madison, was elected president of NIGP at its recent national convention in New York City.

Recently appointed committees of the Wisconsin Chapter include: Liason With National, Jos. V. Duffy, Jos. W. Nichoson, and Maurice S. Park; Membership, Orville A. Gartman, Robert R. Taugher, and George S. Quinn; and Program, Edgar R. Boeck, William L. Boyd, and S. P. Graham.

Cleveland Ass'n Activities

Past presidents of the Purchasing Agents Association of Cleveland were honored at a recent meeting in the Rainbow Room of the Hotel Carter. Featured speaker was George A. Renard, executive secretary-treasurer, NAPA. His topic was "From One P. A. to Another." Prior to the dinner meeting there was an open forum on standardization. PA's were thereby given a weapon which could reduce the number of operating and supply items in a plant from 9,000 to 5,000 and cut inventory by $180,000. The basic standardization program was presented through the medium of slides. Discussion was handled ably by A. O. Anderson of the Aluminum Co. of America and William H. Mansfield of Perfection Stove Co.

Youngstown PAs Meet

Purchasing at United States Steel Corporation was discussed at a recent meeting of the Youngstown District Purchasing Agents Association. Featured speaker was Ralph Moffitt, director of purchases, U. S. Steel. Mr. Moffitt described details of the organization of the purchasing activity in his company. He stressed the fact that U. S. Steel management delegates to purchasing full authority to do a top notch purchasing job. In this connection, he disclosed how U. S. Steel went about making capital purchases of buildings, equipment, etc.

Chicago Association

The November meeting of the Purchasing Agents Association of Chicago featured a departure from general theme of speakers on *strictly* business and purchasing topics. Guest speaker was Dr. Louis L. Mann, Rabbi of the Chicago Sinai Congregation. Dr. Mann, who is also very well known for his civic work and as an author and lecturer, spoke on "Your Mind—Plus or Minus."

N. A. P. A. President Ahl Addresses Chattanooga Ass'n

Both Howard Ahl, N. A. P. A. national president, and Walter Joyce, vice president, District 7, were guests at the November meeting of the Purchasing Agents Association of Chattanooga. Listening to Mr. Ahl give his views on "Purchasing's Relation with Management" are, left to right, J. H. McDowell Jr., Walter Joyce, and Willard Travis. Earlier, Mr. Joyce had discussed "Purchasing Progress."

Lubricated Plug Valves Finding Wider Application In Industry

By Charles J. Kentler,
Technical Consultant, Rockwell Manufacturing Company

Probably one of the oldest devices used by man for the control of fluids in closed conduits is the plug-cock or stop cock. With the introduction of the pressure-lubrication principle, the ancient plug cock regained its former prominence in the form of the modern lubricated plug valve.

Available today in a wide range of sizes, styles and materials, this valve is gaining favor not only for special applications but for general plant use as well. Through long identification with the petroleum and gas industries, lubricated plug valves are classed as precision-engineered equipment, designed for special duty applications. Yet they are competitive cost-wise with other classes of valves.

Lubricated plug valves are of the "block" or complete shut-off type, as compared with globe valves, for instance, which are used primarily for throttling service. They have three basic parts—body, cover and plug, the plug being the only moving member.

The plug is available in cylindrical and tapered form, with the latter generally preferable. Nothing is simpler for valve actuation than the tapered rotary principle. Since the valve is opened and closed by rotation only, vital seating surfaces are self-protecting and self cleaning. The valve does not contain enlarged pockets or recesses to collect sediment, or other foreign bodies to interfere with valve action.

The tapered shape of the plug combines the tight fit advantages of wedge action with the sliding action of rotary movement. Properly lapped, the plug is self-seating and self-adjusting for wear.

One of the outstanding features of the plug valve is its quick opening and closing operation. A quarter-turn fully opens or closes the valve. A stop collar on the valve gives positive indication as to the position. In this way, the operator does not have to rely on the "feel" of a wheel's resistance to tell if the valve is closed.

Compared with valve body designs for other types of open-close valves, the lubricated plug valve body is probably the simplest and most compact. There are no high projecting yokes or bonnets, no exposed threads to corrode, and no underhanging body to require room below the pipe line.

The space economy offered by this type of valve makes it particularly suitable for manifolds for pump houses, under pavements or other places where space is at a premium.

Valve and Regulator set-up on gas house where gas supply is metered.

The pressure-lubrication feature of the valve performs three important functions: it provides "jacking" action, seals the valves, and reduces friction and wear to a minimum.

Thorough lubrication of the plug and interior surfaces of the valve body makes for easier valve operation and long life. The plug does not require excessive torque, since pressure thrust is carried on a large lubricated bearing area, instead of on a narrow dry seat as in ordinary valves. Unless destructively treated, breakage of a plug valve shank is practically unknown.

Application

For general plant service lines such as water, compressed air, low pressure steam fuel, hydraulic, etc., standard semi-steel plug valves can be used. Plug valves are available in patterns inter-changeable with standard gate valves. The valves are also produced in a wide variety of metals and alloys for special services involving corrosion, high or extreme low temperatures, pressure or other special operating conditions.

The valves are available equipped

(*Please turn to page* 214)

For Stampings
...look for the PLUS
beyond
the PRICE!

Ever think how much time good quick service saves you and other key men in both office and plant?

Excellent service – proved every business day for 39 years – is another of the many plusses you get when you buy Detroit stampings.

Look for the Plusses *beyond* the price the next time you buy stampings!

And be sure to try DETROIT

DETROIT STAMPING COMPANY
DE-STA-CO
408 Midland Ave., Detroit 3, Mich.
"America's Best-Known Jobbing Stampings Manufacturer"
For More Information Circle No. 247 on Inquiry Card—Page 17

ROUND

¼" to 4" O.D. 7 to 22 gauge

SQUARE	Gauge	RECTANGULAR
⅜" to ¾"	16 thru 22	⅜" minimum side to 5" maximum side
¾" to 1"	11 thru 22	
1" to 2"	11 thru 20	
2" to 3"	11 thru 18	

Carbon 1010 to 1025

During nearly 40 years in business, Michigan has fabricated for its customers more than a billion feet of tubing. This is proof of Michigan's acceptance by industry as a major source of dependable modern electric resistance welded steel tubing.

No matter what your product, we urge you to consider the advantages in design, low cost manufacture and adaptability of Michigan tubing. It comes in round, square and rectangular shapes in a wide variety of sizes, and is of uniform strength, weight, ductility, ID and OD, machinability and weldability. Michigan tubing can be formed or machined in your plant, or prefabricated in ours. And, remember, Michigan tubing is *always* dependable.

Michigan engineers will welcome the opportunity to visit your plant and discuss the selection of tubing best suited to your product.

Michigan Tubing can be flanged, expanded, tapered, swaged, beaded, upset, flattened, forged, spun closed, fluted, and rolled.

RESISTANCE WELDED STEEL TUBING

Michigan STEEL TUBE PRODUCTS CO.

THE OLDEST NAME IN ELECTRIC

Nearly 40 Years in the Business

9450 BUFFALO ST. • DETROIT 12, MICH.

FACTORIES: DETROIT, MICHIGAN • SHELBY, OHIO

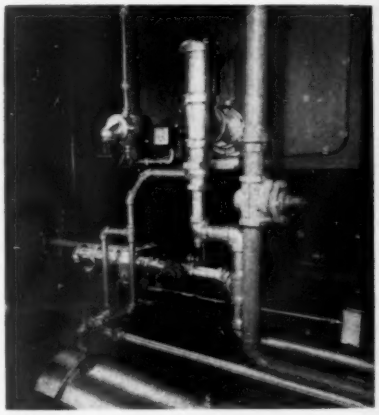
DISTRIBUTORS: Steel Sales Corp., Chicago, St. Louis, Milwaukee, Indianapolis and Minneapolis —Miller Steel Co., Inc., Hillside, N. J.—C. L. Hyland Co., Dayton, Ohio—Service Steel Co., Los Angeles, Calif.—Strong, Carlisle & Hammond Co., Cleveland, Ohio—Globe Supply Co., Denver, Colorado—W. A. McMichaels Co., Upper Darby, Pa.—A. J. Fitzgibbons Co., Buffalo, N. Y.—Harry E. Clark & Co., Houston, Texas—C. I. Crais Co., Birmingham, Ala.

For More Information Circle No. 248 on Inquiry Card—Page 17

(*Continued from page* 213)

with every type of standard or special flanges, including Dresser ends. For jacketed service, plug type valves are available with complete flange-to-flange jacketing in standard sizes.

Because lubricated plug valves give positive shut-off, blinds and blanking of valves are unnecessary. Also, bypasses, a necessity when gate and conduit type valves are used on high pressure differential service, are not needed with plug valves.



Valve on left shut-off for gas supply to boiler, valve on top shut-off valve for hot water supply.

In addition, a useful and unique characteristic of plug valves is the ease with which they can be adapted for multi-port construction. In the 3-way form, a single L-shaped passage connects any of two ports; with a T-shaped opening any of three ports are connected; and the 4-way type has two cut-outs on opposite sides which connect any two adjacent parts of four ports with a quarter turn of the valve.

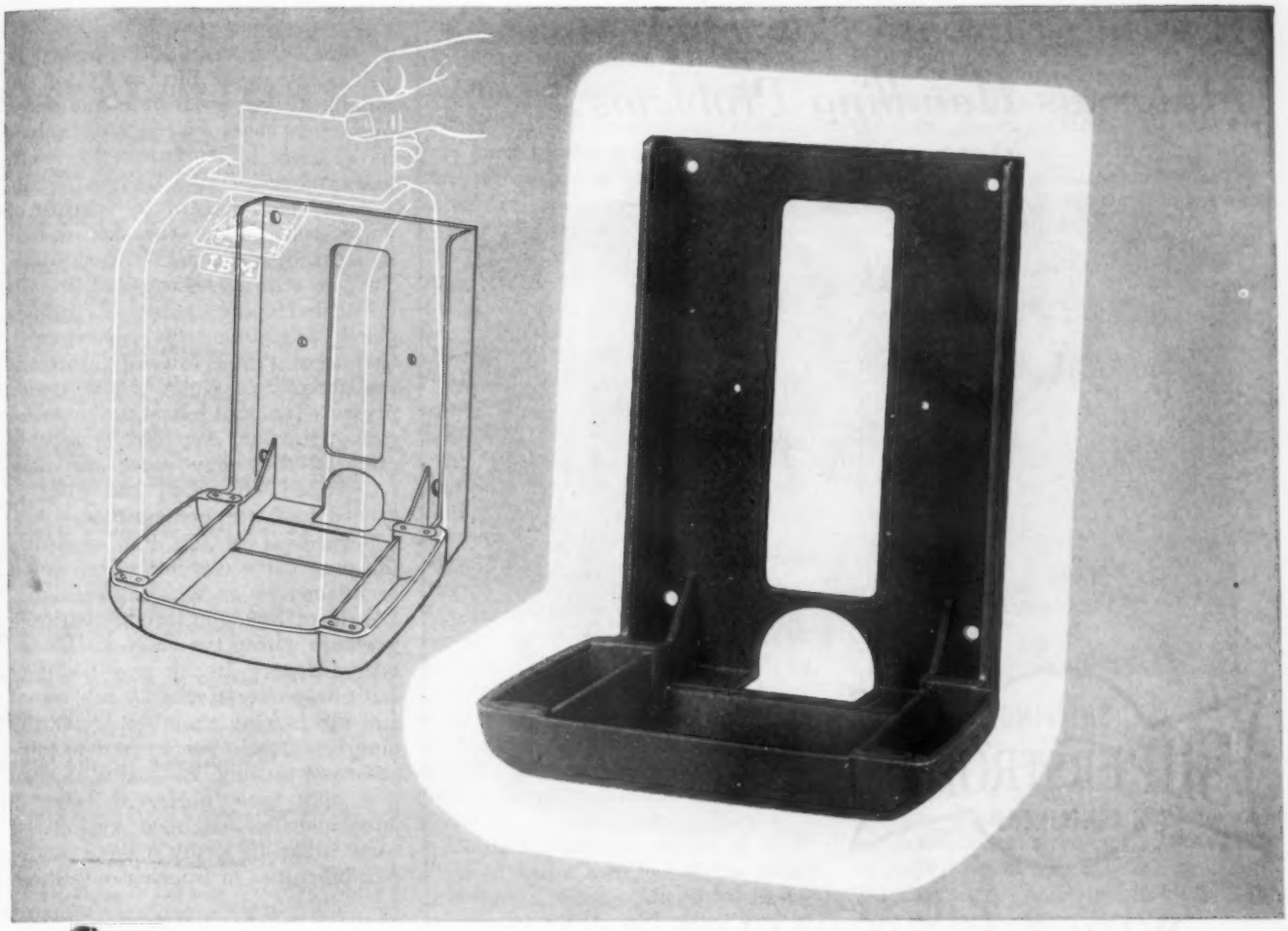
Plug valve accessories are available in a wide variety of forms to allow complete flexibility in method of installation, operation and servicing.

Maintenance

A recent survey of our sales of plug-type lubricated valves extending over a 20-year period indicates that the ratio of repair and replacement parts is less than 1 to 100. Put another way, cost of lubricated plug valve repair parts over a period of years is about one-tenth that of other type valves. This favorable differential is due to the fact that there is little or no need for renewal of seating parts, packings, stems or re-welds.

A simple program of periodic lubrication, which takes a minimum

(*Please turn to page* 218)



TIME MARCHES ON *automatically . . . supported by* PARKER DIE CASTINGS

IBM'S fully-automatic, electric time recorder is a far cry from the old-fashioned time clock. This modern engineering development handles with ease and sureness any kind of work schedule, no matter how complex. To produce the wall mounting bracket shown above, IBM and Parker together worked out the design of the part. The result: a die casting that meets every specification at lower total cost.

This close co-operation from blue print to finished product typifies the complete engineering—as well as manufacturing—service offered by Parker. No matter how complex your die casting problem, Parker will be glad to help you find the answer. Just call the nearest Parker sales engineer listed at the left or write the factory direct.

PARKER
SALES ENGINEERS

CHICAGO 49, Ill.
Ollie J. Berger Company • 2059 East 72 Street

CINCINNATI, Ohio
William H. Broxterman • 2174 Buck Street

DETROIT 35, Mich.
Hodgson-Geisler Co. • 18917 James Couzens

GIRARD, Penna.
Daniel F. Marsh • 35 Chestnut Street

KIRKWOOD 22, Mo.
Edward F. Higgins, Jr. • 102 West Adams Street

WILTON, Conn.
Girard L. Palmer • Belden Hill Road

SYRACUSE, N. Y.
J. C. Palmer • 712 State Tower Bldg.

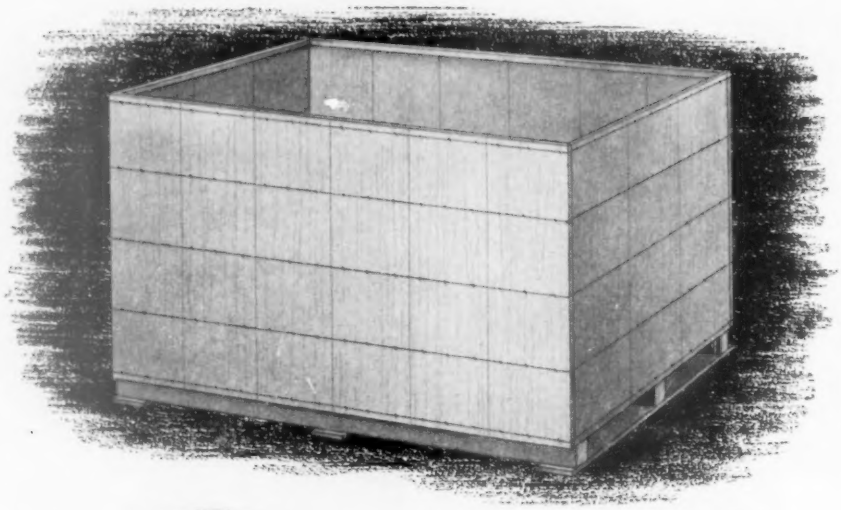
BELLEFONTE, Penna.
Warren G. Olson • 420 East Linn Street

Parker White Metal Company • 2153 McKinley Ave., Erie, Pa.

PARKER **ALUMINUM and ZINC *die castings***

For More Information Circle No. 251 on Inquiry Card—Page 17

A Multi-Purpose Box That Answers Materials Handling Problems...



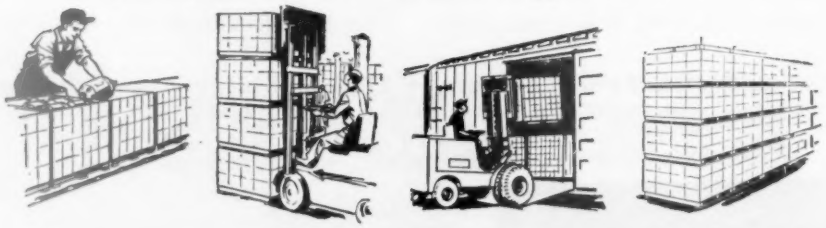
SHIPPING TRADE SUPERSTRONG MARK CONTAINERS REG. U.S. PAT. OFF.

WIREBOUND PALLET BOX

The versatility of wirebound containers is well exemplified in the SUPERSTRONG Wirebound Pallet Box. You can use it on the production line ...for interplant transportation of parts...as a storage bin...as a shipping container which may be easily knocked down and returned for reuse.

SUPERSTRONG Wirebound Pallet Boxes are light in weight, sturdily constructed—and offer an economical answer to materials handling cost problems. They are engineer designed and built to your individual requirements.

We would appreciate an opportunity to study your problems and offer our suggestions.



RATHBORNE, HAIR and RIDGWAY BOX CO.
1440 WEST 21st PLACE • CHICAGO 8, ILLINOIS

For More Information Circle No. 252 on Inquiry Card—Page 17

(*Continued from page 214*)

of time, will keep lubricated plug valves in service for the life of the piping. In fact, we have come across numerous cases where plug valves have been taken from old, worn lines and re-installed on new piping.

A common hazard to the life of valve seats is the abrasion caused by dust, dirt and debris in the line. This is entirely eliminated in the lubricated plug valve if proper gland adjustment is maintained. Critical seat areas are fully lubricant sealed, and the lubricant is under pressure so that abrasive material cannot intrude. Any dirt or scoring material that may reach the plug is scraped off when the plug is turned back to open position.

Regardless of the line pressure, the plug valve can be re-lubricated as effectively as with no pressure. Lubricant injection builds hydraulic pressure within the valve to the required degree. In this way the plug can always be effectively lubricated and the jacking chamber under the plug adequately pressurized to permit easy turning. As a result, even if a plug type lubricated valve is unopened for extended periods of time, it can be easily opened, without difficulties of freezing or galling.

Past President of St. Louis Ass'n Speaks at Sales Meeting

James R. Ritterskamp, Director of Purchases at Washington University and past president of the Purchasing Agents Association of St. Louis spoke to the salesmen of Hubbell Metals at their Annual Sales Meeting.

Mr. Ritterskamp's title was "Do You Believe?" He enumerated ten points that purchasing agents like in salesmen that call upon them. Mr. Ritterskamp also told of some of the problems encountered by purchasing agents and how salesmen can help them do the best job for their company.

Kaiser Aluminum
DISTRIBUTORS

ATLANTA, Ga., Alpine 4885
Federated Steel Company
BALTIMORE, Md., Peabody 2-7300
Hill-Chase Steel Company of Maryland
Asheboro, N.C.: Phone 5200
Norfolk, Va.: Beach 2601W
Richmond, Va.: Phone 7-4573
Roanoke, Va.: Phone 2-7740
Washington, D.C.: Republic 7-7337
BEAUMONT, Tex., Phone 4-2641
Standard Brass & Mfg. Co.
BIRMINGHAM, Ala., Phone 9-2127
Hanna Steel Corporation
CHICAGO METROPOLITAN AREA
Fullerton Steel & Wire Co., Merrimac 7-2700
Korhumel Steel & Aluminum Company
Evanston, Ill.: Ambassador 2-6700
CINCINNATI, Ohio, Wabash 4480, 4481
Morrison-Drabner Steel Co.
CLEVELAND, Ohio
Copper & Brass Sales, Inc., Endicott 1-6757
Nottingham Steel Company, Atlantic 1-5100
DALLAS, Tex.
Delta Metals, Inc., Logan 7443
Earle M. Jorgensen Co., Riverside 1761
DAVENPORT, Iowa, Phone 3-1895
Nichols Wire & Aluminum Co.
DETROIT, Michigan
Copper & Brass Sales, Inc., Lorain 7-3380
Steel Products Corp., Vermont 6-9285
HONOLULU, T.H., Phone 5-2541
Permanente Cement Co.
HOUSTON, Tex.
Earle M. Jorgensen Co., Orchard 1621
Standard Brass & Mfg. Co., Blackstone 6531
INDIANAPOLIS, Ind.
Hubbell Metals Inc., Hickory 9261
F. H. Langsenkamp Company, Imperial 4321
KANSAS CITY, Mo., Baltimore 7760
Hubbell Metals Inc.
LOS ANGELES, Calif.
Eureka Metals Supply Company, Mutual 7286
Earle M. Jorgensen Co., Lorain 7-1122
Reliance Steel Company, Adams 3-3193
MIAMI, Fla., Phone 84-3165, 84-2490
Fullerton Metals Co.
1045 Northwest 71st St.
MILWAUKEE, Wis., Evergreen 4-6000
Korhumel Steel & Aluminum Corp.
of Wisconsin
MINNEAPOLIS, Minn., Geneva 2661
Korhumel Steel & Aluminum Company
NEW ORLEANS, La.
Orleans Steel Products Co., Inc.
Raymond 2116
Standard Brass & Mfg. Co., Auburn 1381
NEW YORK METROPOLITAN AREA
T. E. Conklin Brass & Copper Co., Inc.,
Walker 5-7500
A. R. Purdy Co., Inc.
Lyndhurst: Webster 9-8100
New York: Chelsea 3-4455
Newark: Humboldt 2-5566
OAKLAND, Calif.
American Brass & Copper Co., Higate 4-2366
Gilmore Steel & Supply Company
Glencourt 1-1680
Earle M. Jorgensen Co., Higate 4-2030
OMAHA, Nebr., Atlantic 1830
Gate City Steel Works
PHILADELPHIA, Penna., Delaware 6-5400
Hill-Chase & Company, Inc.
Allentown: Hemlock 2-8077
York: York 5790
PHOENIX, Ariz., Phone 8-5331
Arizona Hardware Co., Inc.
PITTSBURGH, Penna., Hemlock 1-5803
Follansbee Metal Warehouses
PORT ARTHUR, Tex., Phone 5-9377
Standard Brass & Mfg. Co.
PORTLAND, Ore., Tuxedo 5201
Eagle Metals Inc. of Oregon
SAN FRANCISCO, Calif., Klondike 2-0511
Gilmore Steel & Supply Company
SEATTLE, Wash., Lander 9974
Eagle Metals Company
SHREVEPORT, La., Phone 2-9483
Standard Brass & Mfg. Co.
SPOKANE, Wash., Keystone 0586
Eagle Metals Company
ST. LOUIS, Mo., Franklin 0212
Hubbell Metals Inc.
SYRACUSE, N.Y., Syracuse 72-6677
A. R. Purdy Co., Inc.
TULSA, Okla., Phone 85-1511
Earle M. Jorgensen Co.
WICHITA, Kans., Amhurst 7-1208, 7-1209
General Metals Incorporated
WILKES-BARRE, Penna., Butler 7-3013
Hill-Chase & Company, Inc.
WORCESTER, Mass., Worcester 7-4521
Merrill Aluminum Corporation

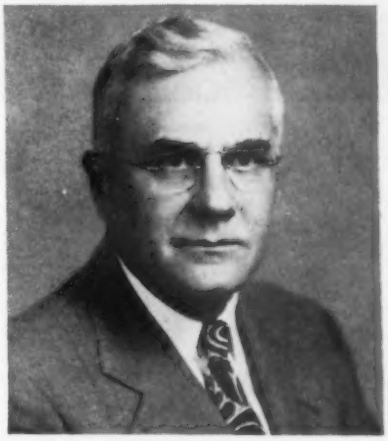
Purchasing Men Prominent in American Standards Conference; Jolly and Gushée Honored

Well known purchasing executives and others prominent in the procurement field figured prominently in the recently concluded Fifth National Conference on Standards. The affair, sponsored by the American Standards Association, was held at the Hotel Roosevelt, New York City.

Nelson J. Gibbins, Methods and Purchasing Engineer for Motor Wheel Corp., Lansing, Mich., and William R. Murray, Director of Materials and Purchasing for Bigelow-Sanford Carpet Company, Thompsonville, Conn., spoke on "What the Purchasing Agent Wants from the Engineer in Standardization." (Mr. Murray's talk appears on page 95 of this issue. Mr. Gibbins' talk will appear in a later issue.) E. H. Weaver, Union Oil Company of California, Los Angeles, and chairman of the Committee on Standardization of the National Association of Purchasing Agents, discussed the standardization work of N.A.P.A.

Stuart F. Heinritz, editor of Purchasing, was a member of the panel discussing, "What's Ahead for Standardization—Through the Eyes of the Technical and Business Press." (This talk appears on page 97 of this issue).

Thomas D. Jolly, Vice President, Purchasing and Engineering, Aluminum Company of America, was presented ASA's highest award the Howard Coonley Medal, for his contributions to the U.S. economy through advancing national voluntary standards. Mr. Jolly, a past president of the National Association of Purchasing Agents, and past president of ASA.



T. D. Jolly

Edward T. Gushée, Vice President of the Detroit Edison Company, and a pioneer in the purchasing field was elected President of ASA for the coming year. He is co-author of the book "Scientific Purchasing," and a holder of N.A.P.A.'s Shipman Medal.

Vincent deP. Goubeau, Vice President-Materials, Radio Corporation of America, was elected to represent N.A.P.A. on the Board of Directors of ASA.

Dun & Bradstreet Survey Predicts Business Upturn

Business men expect a definite upturn for the first quarter of 1955, according to the results of a survey by Dun & Bradstreet, Inc.

The survey shows that 56% of the 1309 executives responding look forward to higher sales and 43% expect larger net profits after taxes, comparing the two first quarters. Lower sales are anticipated by 13% of the business men and smaller net profits are expected by 12%. No change in the direction of sales is expected by 31% of the concerns surveyed, and 45% are of the opinion that the level of their earnings will be about the same.

The October survey is one of a series made periodically. The latest survey is the first in over a year in which a majority of executives have expected an increase in sales, looking ahead to a forthcoming quarter. In the preceding survey made for the fourth quarter of 1954 compared with the same period of 1953, the number of business men expecting sales increases was 48%. The percentage for the third quarter was 46%, for the second quarter 43%,

Another interesting aspect of the survey is the fact that slightly more executives are projecting increases than decreases in the forthcoming levels of their inventories. The figures show that 24% of the concerns expect higher first quarter inventories, compared with the 1954 first quarter, while 23% anticipate decreases and 53% think there will be no change.

Majority expectations as to selling prices in the first quarter of 1955 are heavily of the view that prices will show no change, with 12% expecting that prices will be higher, 76% that they will be the same, and 12% anticipating lower

While 79% of the business men interviewed expect to operate with the same number of employees, the 14% who believe they will be adding employees outnumber those who expect to reduce their employment levels by two to one.

NEW...

Scientific Advance in Head Protection

Internal as well as External head protection achieved by patented "geodetic" suspension in New Willson Super-Tough® Hats and Caps.

Realizing that most fatal head injuries are due to shock to the brain rather than injury to the skull, the Cornell Aeronautical Laboratories designed and patented a new suspension system for industrial safety hats that provides maximum protection and comfort to the wearer.

This patented suspension is available only in Willson Super-Tough® Hats and Caps!

This suspension is made up of "geodetic" crown straps scientifically located to distribute the force of a blow over the entire head—not concentrate it in a small area on the crown of the head. In addition, the tough Fiberglas hat shell is made safer and more comfortable to wear by the pneumatic cushioned head band. This pneumatic cushion absorbs and distributes the force of lateral blows through a series of metered, interconnected air cells.

Write today for the new Willson Super-Tough® hat bulletin which describes in detail the "why and how" of these new Willson Super-Tough® hats with the advanced, patented suspension.

Clip and mail coupon for latest head safety information.

Please send me your bulletin on the new Willson Super-Tough® Hats and Caps with "geodetic" crown straps and "pneumatic" head band.

*NAME*_____ *TITLE*_____

*COMPANY*_____

*ADDRESS*_____

*CITY*_____ *ZONE*_____ *STATE*_____

More Than 300 Safety Products Carry This Famous Trademark

WILLSON®

Leaders in Research and Development of Safety Equipment Since 1870

221 Washington Street • Reading, Penna.

For More Information Circle No. 255 on Inquiry Card—Page 17

Hectograph—Master System

(*Continued from page* 87)

Don't be afraid to create all the copies for which there is a legitimate need. It may cost you more, as a hidden expense, to make one section use another section's files to obtain information, than it costs to make and file that extra copy.

Summing up—the advantages of the hectograph system do not lie in reducing the number of copies to the barest minimum. They lie instead in eliminating retyping and minimizing handwriting of papers and posting of receipts. In this way you get greater accuracy, improved controls, and significant economies.

Key to Effective Conversation

(*Continued from page* 118)

for overcoming the prevailing weakness of loading talk down with too many minor details. Try just hitting the high spots, the bare essentials, in your stories, and notice how their interest perks up. When they ask you to fill in the gaps with greater detail, you will know that you've been successful in gaining their interest.

The tried and proved method of stimulating interest in your listener is to express the topic in terms of "human interest". Your listener is a person—interested in other persons—particularly in persons known to him—and most of all in himself. The closer you can get to the "You" in your approach (and the farther from "I") the more effective your conversation will be.

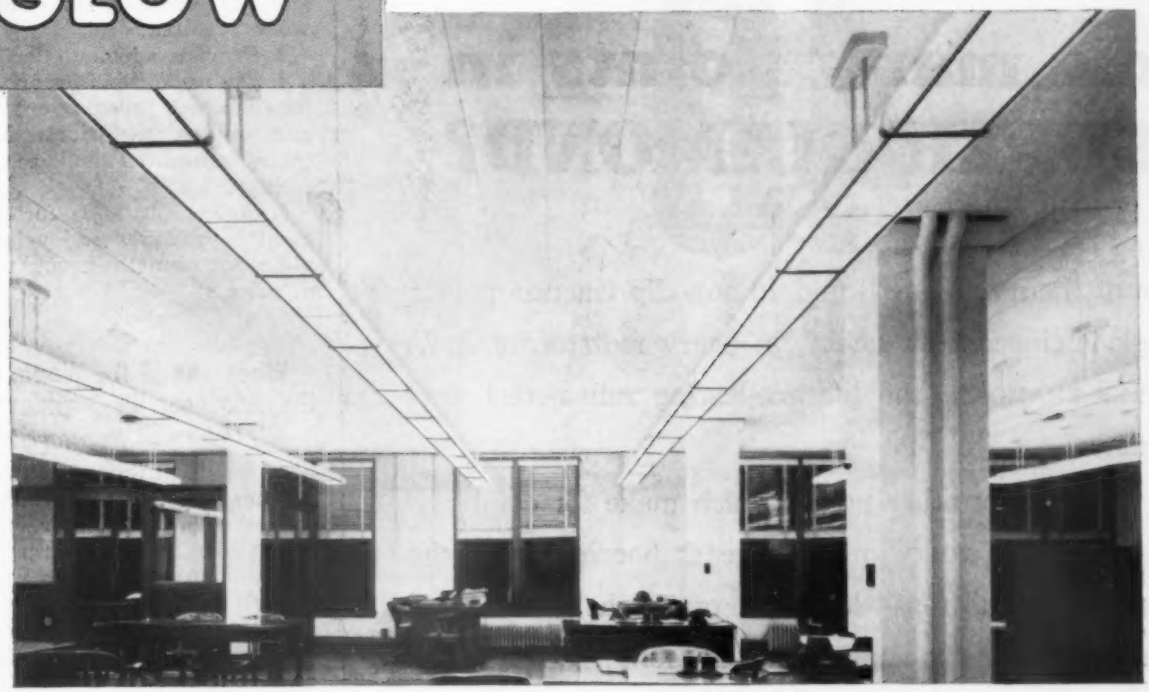
The appliance salesman can say, "I know that a food freezer can save money for the user." But he can make his point far more effectively by being specific and adding that human interest touch. For example: "Dr. Jones' wife has one, and by freezing a big supply of meat during the season when prices are low, she figures they saved $14 on meat alone."

It is apparent by now that there is no short-cut for switching the other person's interests to suit our whims. The surest way to start a conversation is to pick their minds first, then follow the interests they already have; with a little ingenuity you can work from this to the essential point you have in mind. If we try to shape the beginning talk to our own interests, we're almost bound to lose *their* interest. We'll find ourselves on the same spot as the fellow who brought his harp to the party—and nobody asked him to play.

Change from GLOOM to GLOW

BEFORE: *The old globe lights glared, and the illumination was low.*

AFTER: *Now the National Bank of Detroit has effective uniform lighting. Lighting fixtures—Skyray #1046—supplied by the Electro Silv-A-King Corp., Chicago, Illinois and Bridgeport, Conn.*



—with EVENGLO® polystyrene panels

NATIONAL BANK of Detroit recently modernized the lighting in its main office. In place of the old globe lights, it installed new fluorescent fixtures with "Evenglo" components. To provide this pleasant, effective illumination, the Electro Silv-A-King Corp. chose the "Evenglo" polystyrene formulation that had the exact color, light transmission and diffusion desired.

You, too, may specify the color tone of light, degree of brightness and amount of diffusion needed in your lighting fixtures when you require that the components be made of "Evenglo" polystyrene. You'll find, too, that building owners like this Koppers Plastic because it is easy to clean, holds its shape, and looks trim.

Koppers application engineers will be glad to assist you in selecting the specific "Evenglo" formulation you need to get the lighting results you want. For more information write to us today.

KOPPERS®

Koppers Plastics Make Many Products Better and Many Better Products Possible.

Koppers Plastics

KOPPERS COMPANY, INC., Chemical Division, Dept. P-15, Pittsburgh 19, Pennsylvania

SALES OFFICES: NEW YORK • BOSTON • PHILADELPHIA • ATLANTA • CHICAGO • DETROIT • LOS ANGELES

For More Information Circle No. 256 on Inquiry Card—Page 17

One-half actual size

How many 40 points in a SUPER-DIAMOND?

Count them and you'll find 40 non-slip traction points, angle-engineered to safety, in every footstep of A.W. SUPER-DIAMOND, the lifetime-lasting rolled-steel floor plate.

Count the other points which make for combined economy and safety in this master flooring for entire floors or small areas—low cost, overnight installation, durability, easy cleaning, fast draining, resistance to fire, heat and most chemicals—and you'll find that every foot in your plant is safer when you install the exclusive-patterned

A.W. SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

"The diamond in the rough . . . a gem of a flooring."

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send A.W. SUPER-DIAMOND Booklet SD-35.

Name_____
Title_____
Company_____
Address_____
City_____ Zone_____ State_____

Other products: A.W. ALGRIP Abrasive Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grades)

For plants where oil, water and grease raise special problems of slipping accidents, we suggest a check on the special qualities of A.W. ALGRIP . . . the world's only abrasive rolled steel flooring.

For More Information Circle No. 257 on Inquiry Card—Page 17

The Purchasing Function

(*Continued from page* 70)

or of the accounts payable section of the accounting department.

Conclusion

On the basis of this analysis, it becomes apparent that five things are necessary to do the best, complete job of industrial purchasing:

1. Formulate your objectives.
2. Establish a selected, sound organization for capable administration; for commodity analysis; for market research; and for the efficient acquisition of all materials, supplies, services, and subcontract work required.
3. Provide adequate facilities.
4. Fix responsibilities and authorities for each procurement function, and outline basic procedures for their transmittal and accomplishment.
5. Strive constantly for improvement of qualities and values, simplification of methods, and reduction of costs.

* * *

What the P.A. Wants from the Engineer in Standardization

(*Continued from page* 96)

have seen that item purchased from another supplier at a considerable reduction in cost. Regardless of all the history to the contrary (and I know of many instances where the buyer's engineers have gone into suppliers' plants and reduced costs) you just can't be positive that your own engineers always are going to know more about the other fellow's business than he does—or know more than the supplier's competitor knows.

Along this same line, no buyer wants standardization by brand name. If a proper specification cannot be written, or if the expense of writing one might not be justified, at least please specify "Brand X *or equal*". Don't tie your buyer's hands with "Brand X, *period*".

We are in a competitive market—some people say it is the most competitive ever. We all want prosperity and profits from our respective companies. Engineers want them. We purchasing agents certainly do. We shall both do better as we do it together, with agreement on proper standards.

USE INQUIRY CARD PAGE 17

brighter

COLOR

Corabrite

smoother

FINISH

more uniform

COLOR AND TEXTURE

HINDE & DAUCH

AUTHORITY ON PACKAGING

12 FACTORIES • 40 SALES OFFICES

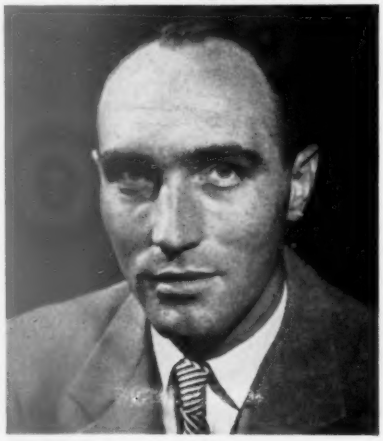
Send for free Corabrite folder—
"A New Look in Corrugated Boxes." Hinde & Dauch, Sandusky, Ohio

←For More Information Circle No. 259 on Inquiry Card—Page 17

For More Information Circle No. 260 on Inquiry Card—Page 17

Personalities IN THE NEWS

Richard Lee Quasey, a buyer assigned to the contracting division of Dravo Corp., Pittsburgh, has been made



R. L. Quasey

Assistant Purchasing Agent of the corporation. Mr. Quasey joined Dravo in 1946, serving as an engineer with the contracting division until his appointment as a buyer in 1952.

Eastman Kodak Co., Rochester, N. Y., has announced three appointments in its purchasing organization. **Jerome E. Doyle** has been appointed Director of Purchasing at Kodak Park, succeeding **Joseph F. Burns**, who is retiring. **E. Philip Kron** and **Edwin A. Galen** have been made Assistant Directors of Purchasing at the plant. Mr. Doyle joined Kodak in 1934 as a member of the firm's accounting department. After service in World War II, he rejoined Kodak's accounting department and later became assistant to the Kodak Park director of purchasing He was made assistant director of purchasing in 1952. Mr. Kron joined Kodak's accounting department in 1934, also. Later he transferred to the engineering, construction and maintenance division as assistant to the superintendent. Returning to the company after the war, he left again in 1947. On his return, in 1950, he was made a buyer of mechanical equipment, and later, purchasing engineer. Mr. Galen joined Kodak in 1919 and has been purchasing agent at the plant since 1950.

R. H. Kelly

Robert H. Kelly has succeeded Walter F. Klump as head of the Chicago district purchasing office for Youngstown Sheet and Tube Co., Youngstown, Ohio. He will have the title of Assistant Purchasing Agent in charge of the Chicago purchasing office.

The transfer of **George L. Teller** from the Philadelphia Purchasing Division Regional office to the West Allis Works Purchasing Department has been announced by Allis-Chalmers Mfg. Co., Milwaukee. Mr. Teller will take over the duties of Coordinator of steel castings. **James J. Gilboy** has been named successor to Mr. Teller in the Philadelphia office.

A. C. Lundgren, Vice President and Director of Purchases, Thew Shovel Co., Lorain, Ohio, has announced the

V. H. Gordon

promotion of **V. H. Gordon** from Assistant Purchasing Agent to Purchasing Agent. Mr. Gordon has been a member of the Thew purchasing department since 1946. Prior to joining Thew, he was director of purchases at Cleveland Cooperative Stove & Foundry and has a background of 18 years of production and purchasing experience.

S. D. Clarke, Jr., is now Purchasing Agent of Rust Engineering Co., Pittsburgh. Prior to joining Rust, he was purchasing agent for the Kerotest Mfg. Co., Pittsburgh.

William G. Hildebrand, formerly associate editor of PURCHASING, has been named Executive Secretary of the New York State Food Merchants Association. Mr. Hildebrand joined the organization in 1953 as advertising manager of its publication, "The Food Merchants Advocate".

(*Please turn to page* 230)

LEATHER GLOVE WEAR!
CANVAS GLOVE COMFORT!

RIEGEL LEATHER WORK GLOVES NEED NO "BREAK-IN"

Special tanning of the rugged leathers used in Riegel work gloves makes them pliable, comfortable, from the first moment you put them on! The customer who slips his hand into a Riegel leather glove can *see* and *feel* the difference immediately. No awkward stiffness—he can open and close his hand easily, work with the gloves right away . . . do his job comfortably without tiring his fingers in an annoying "break-in" period. And because Riegel leather work gloves are *guaranteed full size*, always correctly proportioned, strongly sewn, they're the kind of quality product you want to sell and your customers want to buy, again and again. *Tell* your customers this story—and *sell* them more Riegel leather work gloves!

Fast Shipments from Local Warehouses / **A complete Line of Leathers for Every Job!**

Riegel

RIEGEL TEXTILE CORP. • 260 Madison Avenue • New York 16, N. Y. • ATLANTA • BOSTON • CHARLOTTE
CHICAGO • CLEVELAND • DALLAS • JACKSON (MISS.) • LOS ANGELES • PITTSBURGH • ST. LOUIS

For More Information Circle No. 261 on Inquiry Card—Page 17

New Frigidaire Water Cooler

Wastes No Money While It Waits!

Flash-O-Matic Action Cools as Water Flows

Wastes no water—wastes no electricity. Chills instantly as water is used. Just a touch of the new full-width pedal and this new Frigidaire Cooler immediately gives you a uniform stream of water. There's no surging, spurting, or dying out . . . pressure is automatically regulated. New choice of stainless steel or porcelain top, too.

Other models include bottle-type coolers and a special explosion-proof model for industries where explosive fumes or mixtures are present. All powered by quiet, economical Meter-Miser Compressor warranted for 5 years.

Call your Frigidaire Dealer or write: Frigidaire, Dayton 1, O. In Canada, Toronto 13, Ont.

Frigidaire Water Coolers

BUILT AND BACKED BY GENERAL MOTORS

For More Information Circle No. 262 on Inquiry Card—Page 17

William C. Mahan, Assistant Purchasing Agent of Diamond Alkali Co., Cleveland, has been made Purchasing Agent of the company's recently-acquired Muscle Shoals (Ala.) Chlorine-Caustic Soda plant. Mr. Mahan joined the Diamond organization in 1925 in a secretarial capacity, following five years with the Railway Supply Manufacturers' Association. He was transferred to Diamond's Purchasing Department in 1937 and became assistant purchasing agent in 1949. He is a member of the Cleveland Association of Purchasing Agents.

The retirement of **Frank J. Laskey** and the appointment of **W. T. Adams** as Manager of Purchases and Raw Materials has been announced by Republic Steel Corp., Cleveland. At the same time, it was announced that **J. H. Graebing** and **L. H. Ransom** were named Assistant Managers of Purchases. Mr. Adams, born in Rumania, joined the United Steel Co., Canton, a predecessor of Republic Steel, in 1914.

F. J. Laskey

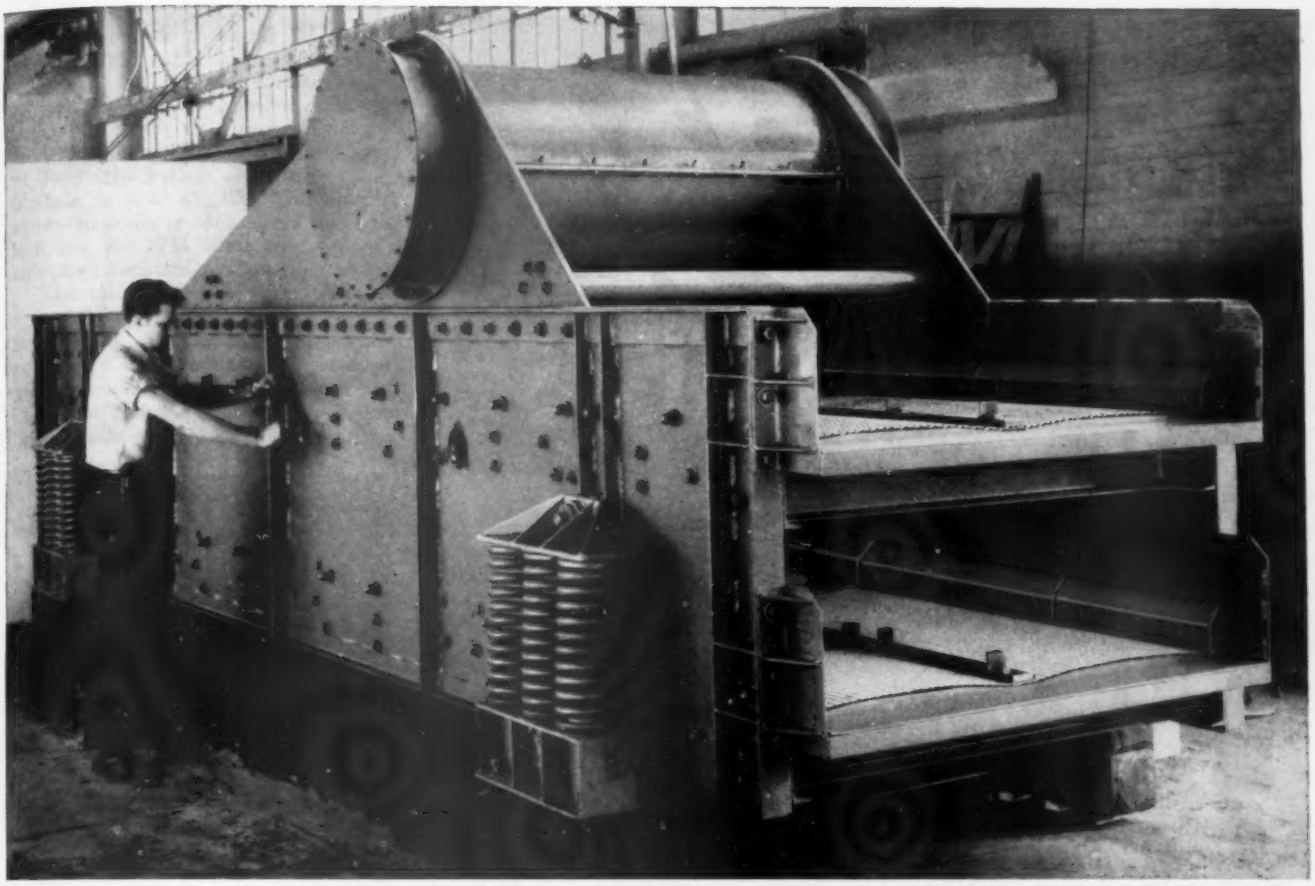
W. T. Adams

In 1926, he was manager of claims for United, but left the company to become sales manager of Moock Electric Supply Co. He returned to Republic, in 1933, as chief electrical buyer and became general purchasing agent in 1945. Mr. Graebing has been with Republic, and its Union Drawn Steel Co. predecessor, for his entire business career. Prior to his current promotion, he was purchasing agent for the Alloys and Refractories Section. Mr. Ransom has been purchasing agent for Republic's Truscon Steel Division for the past eight years. Prior to joining Republic, he was with Keystone Driller Co. and Jones and Laughlin Steel Corp.

The Baughman Mfg. Co., Jerseyville, Ill., has appointed **William D. Baker** as Purchasing Agent.

James N. Huber, Purchasing Agent of Keystone Fabricating Co., Pittsburgh, has been appointed Purchasing Agent of Fort Duquesne Steel Co., a division of Federated Steel Corp., Pittsburgh. He is a member of the Purchasing Agents Association of Pittsburgh.

W. F. Warren is now Purchasing Agent of Trade-Wind Motorfans, Inc., Rivera, Calif. Mr. Warren was previously associated with Trade-Wind until 1948. Since that time he has been business manager of the Bennett Motor Co., Salt Lake City.



ASSEMBLING an RB&W high-strength bolt on Hewitt-Robins' new Eliptex vibrating machine.

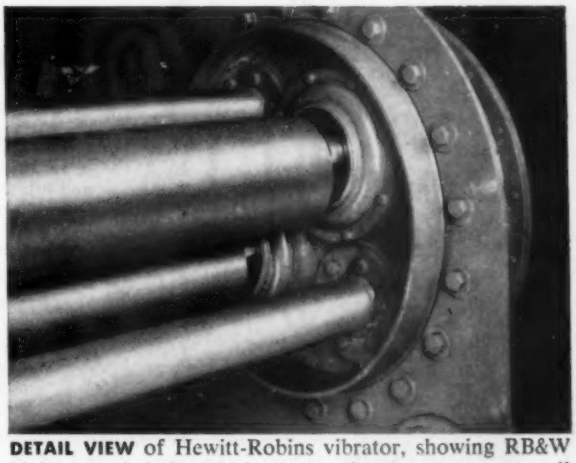
Standardizing on high-strength bolts saves Hewitt-Robins 25%—improves product!

Take a hard look at your fastening operations and you may find you will save a lot by using standard high-strength bolts instead of expensive specials.

Using a standard RB&W high-strength bolt plus a heavy semi-finished nut with two hardened washers, Hewitt-Robins is getting these advantages and savings on vibrating machines: 1. Saving 25% in yearly fastener cost. 2. Eliminating situations requiring body-bound connections with attendant reaming operations. 3. Eliminating all special, finished bolts with varied thread lengths and also all special lock nuts. 4. Eliminating procurement problems and slow delivery of specials. 5. Reducing nut and bolt inventory. 6. Obtaining better performance and lower maintenance on units.

The RB&W product has 2½ to 3 times the clamping force of the previous fasteners. Thus the assembled connection is better able to withstand severe vibration.

Maybe your operation doesn't give fasteners as hard a time as vibrating equipment, but it pays to look into the savings you can expect from specifying standards instead of specials. RB&W has the answers to your questions.



DETAIL VIEW of Hewitt-Robins vibrator, showing RB&W high-strength bolts which must resist shear stress as well as vibration. 4.8

See our insert on high-strength bolts in Sweet's Architectural and Industrial Construction Files.

RB&W **RUSSELL, BURDSALL & WARD**

109 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG

Plants at: PORT CHESTER, N.Y.; CORAOPOLIS, PA.; ROCK FALLS, ILL.; LOS ANGELES, CALIF. *Additional sales offices at:* ARDMORE (PHILA.), PA.; PITTSBURGH; DETROIT; CHICAGO; DALLAS; SAN FRANCISCO. *Sales agents at:* NEW ORLEANS, DENVER, SEATTLE. *Distributors from coast to coast.*

For More Information Circle No. 265 on Inquiry Card—Page 17

Practical Idea for the Production Man

Efficient electric hoists...to move materials overhead and release floor space for more valuable operations.

CM HOISTS

CM COMET ELECTRIC CHAIN HOIST
⅛ to 2 ton capacities—Pendant rope or push button control. Lifetime lubrication. Herc-Alloy double duty load chain. Sensitive control for spotting loads. Heavy duty brake. Upper-lower limit switches.

CM METEOR ELECTRIC WIRE ROPE HOIST
½ to 5 ton capacities—Compact, enclosed design. Low headroom. Continuous duty motor with thermal overload protection for heavy duty service. Precision bearings and helical gears for long life. Only 110 volts at push button control.

Good Suggestion for the Maintenance Man!

Rugged lightweight hand hoists and pullers...to make your job easier and safer

CM CYCLONE HAND HOIST
¼ to 10 ton capacities—Easy to carry and lift. One ton model weighs only 36 pounds. Made of tough aluminum alloy. Herc-Alloy load chain. High efficiency. Lifetime lubrication.

CM PULLER THE "ONE MAN GANG"
¾ to 6 ton capacities—Lifts or pulls at any angle. Lever handle operation. Automatic load brake holds at any point. ¾ ton model weighs only 13 pounds. Herc-Alloy flexible load chain.

ALSO... *CM Trolleys and Cranes*

Call the CM distributor for descriptive literature, prices and fast delivery from stock.

CM HOISTS AND CHAIN

CHISHOLM-MOORE HOIST DIVISION

COLUMBUS McKINNON CHAIN CORPORATION

TONAWANDA, NEW YORK

REGIONAL OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: **McKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONTARIO**

For More Information Circle No. 266 on Inquiry Card—Page 17

Reed H. Chase is moving to New York as Senior Head Office Field Representative for Shell Oil Company's purchasing-stores. He was Manager of purchasing-stores at Shell Development Company's Emeryville, Calif., research center. He started with Shell in Wilmington, Calif., in 1926 as a clerk. He has held the purchasing-stores manager post since 1943. He was first vice president of the Purchasing Agents Association of Northern California.

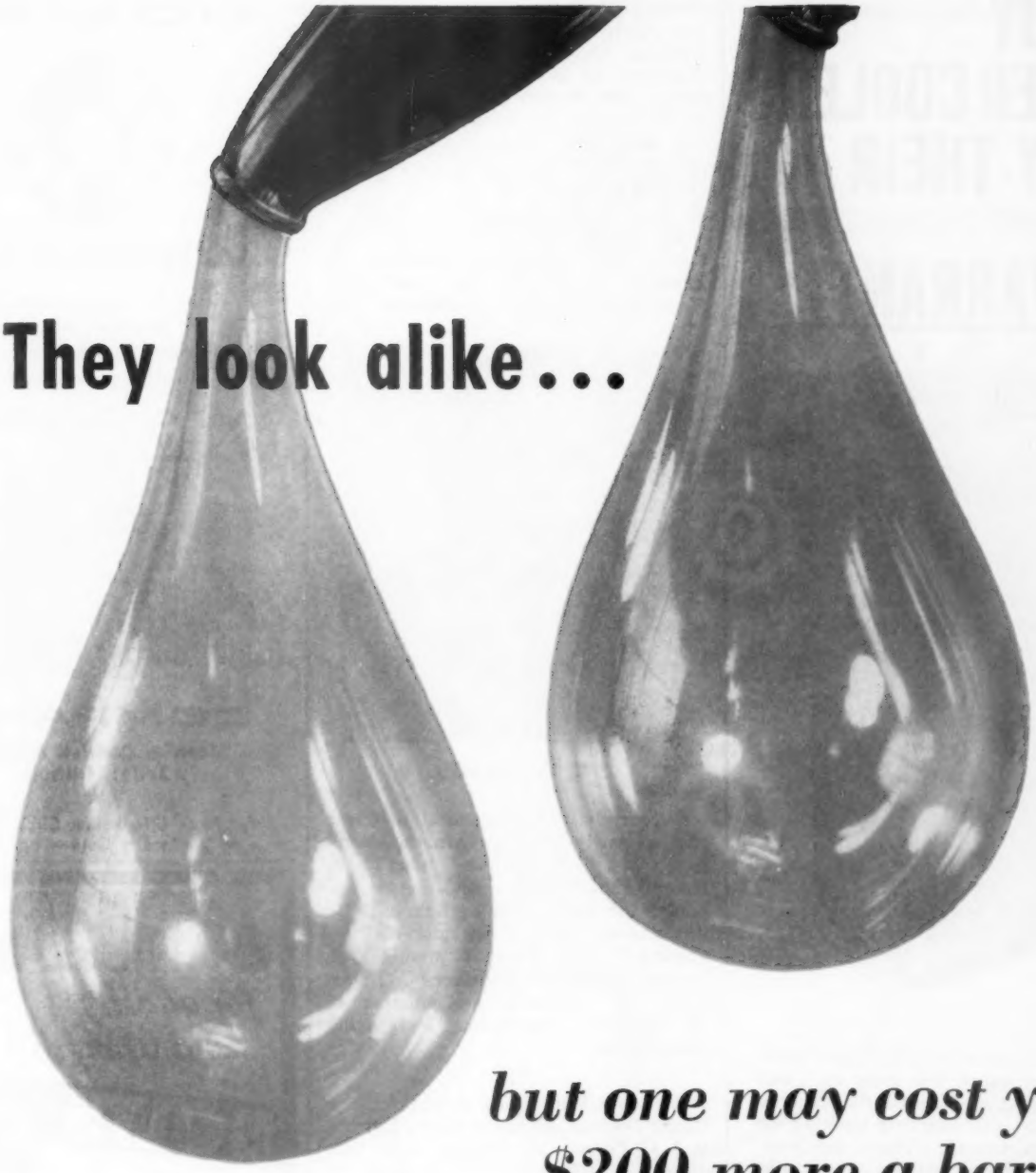
Edward E. Emrick, Jr., Director of Purchases for Ashland Oil & Refining Co., Ashland, Ky., has announced the appointment of **Joseph K. Barron** as Purchasing Agent. Wilbur Caskey and

J. K. Barron

Dan Dunn continue as Assistant Purchasing Agents for Ashland. Mr. Barron joined Ashland as a buyer, in February, 1949. During the previous five years he has been Purchasing Agent for two West Virginia firms, Ellenwood Industries and Adel Precision Co. He was named Assistant Purchasing Agent for Ashland Oil last year.

E. H. Weaver, formerly Manager of Purchases for the Union Oil Co. of California, Los Angeles, has been made Vice President in charge of Procurement and Contracts for the company.

Hicks B. Waldron has been appointed Materials Specialist of General Electric's Distribution Assemblies Department. In his new assignment, he will advise and assist in inventory control and traffic activities of the seven plants in the department. He will also assist in formulating purchasing procedures and policies and establishing patterns of distribution of business in each plant area. Mr. Waldron has been with GE since 1946. He is a graduate of the company's Test Engineering Program and has served as a proposition engineer in GE's Induction Motor Department. For two years he was supervisor of sales training in the Apparatus Sales Division. Prior to his new appointment, he was Purchasing Agent, Non-Ferrous Materials, in GE's Materials Services Department, Schenectady, N. Y. He will now headquarter in Plainville, Conn.



They look alike...

but one may cost you $200 more a barrel

ALL too often, price seems to be confused with value in buying lubricating oils.

Sure, you can save a few cents a gallon on the lubricating oil for an expensive machine by buying a specification product on a bid basis. But remember that you're asking for the lowest quality oil that will meet your specification. And remember, too, that there is not much relationship between an oil specification and actual lubricating performance.

The chances are that a low-priced, specification oil will not deliver the same degree of protection as a branded quality oil made specifically for the job. Actually, it can well cost you $200 a barrel or more in needless maintenance expense!

For best performance of equipment, and lowest maintenance costs, don't settle for less than the best lubrication you can buy. What other important products do you buy by the gallon that are so inexpensive as quality lubricating oils?

GULF OIL CORPORATION • GULF REFINING COMPANY
Gulf Building, Pittsburgh, Pa.

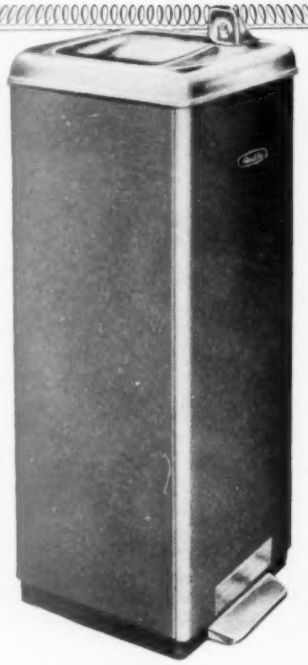
GULF

The finest petroleum products for your every need

For More Information Circle No. 267 on Inquiry Card—Page 17

BUY WATER COOLERS ...BY THEIR

WARRANTY



Electric water coolers look and operate pretty much the same . . . but there's a big, and frequently invisible difference—the warranty backing up their performance. There are warranties, *and* warranties . . . but only one manufacturer dares to offer a warranty guaranteeing *real*, broad protection. Why?

The reason is simple: Only one manufacturer is so confident of superior cooler performance and construction that he does not hesitate to back it up with the strongest, most protective warranty in the industry. This is the *one* manufacturer with over 65 years' experience in water coolers *exclusively* — over 1,000,000 sold throughout the world.

But don't take our word for it . . . prove it to yourself. For your copy of the best warranty offered on *any* cooler, and Bulletin E-6 write today to Cordley & Hayes, 443 Fourth Ave., New York 16, N. Y.

1231

Cordley
NEW YORK

For More Information Circle No. 268 on Inquiry Card—Page 17

Larry Patterson, formerly Purchasing Agent of Simpson Electric Co., Chicago, has been made Director of Material. He is succeeded by his assistant, **Jim Werner**, who was promoted to Purchasing Manager. Mr. Patterson has been with Simpson for 15 years, Mr. Werner has been with the company for five years.

The Perkin-Elmer Corp., Norwalk, Conn., has appointed **Theodore F. Talmage** as Director of Purchasing. He succeeds Eugene W. Dunstan who

T. F. Talmage

was recently named general manager of the newly-formed Vernistat Division. Mr. Talmage has been with Perkin-Elmer since 1941 when he joined the accounting department. He was named Assistant Director of Purchasing in 1950. Prior to joining P-E, he was with Wood, Struthers Co., New York. Mr. Talmage is a member of the Southern Connecticut Purchasing Association.

The new Purchasing Agent for the Dodge Division, Chrysler Corp., Detroit, is **J. C. Poyner**. In addition to his new duties, Mr. Poyner will continue to supervise the buying of steel and other raw materials for the entire corporation, a function he has been performing for the past seven years as Divisional Purchasing Agent. Mr. Poyner joined Chrysler in 1926 as a clerk in the pressed steel division of Dodge Main, and three years later was assigned to scheduling and follow-up duties in the pressed steel planning department. In 1937, he became a stampings buyer with the central purchasing department at Highland Park. He was appointed Divisional Purchasing Agent in 1947.

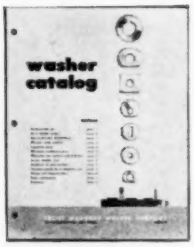
William C. Watts has been appointed Manager, Corporate Purchasing Department of General Foods, White Plains, N. Y. Mr. Watts has spent his entire business career in the purchasing department of General Foods. Starting as a clerk in 1934, he advanced through various buying positions until, in 1947, he was named purchasing agent. He occupied that post until his recent promotion.

JOLIET

WROUGHT

write for our new catalog of standard and special washers for all types of industrial applications.

WASHER



COMPANY

Moen & Connell Avenues
Joliet, Illinois

★

For More Information Circle No. 269 on Inquiry Card—Page 17

ATLAS

for quality and strength

BOLTS

NUTS

SCREWS

WASHERS

ATLAS

SCREW & SPECIALTY CO.
450 BROOME STREET, DEPT. P
NEW YORK 13, N. Y.

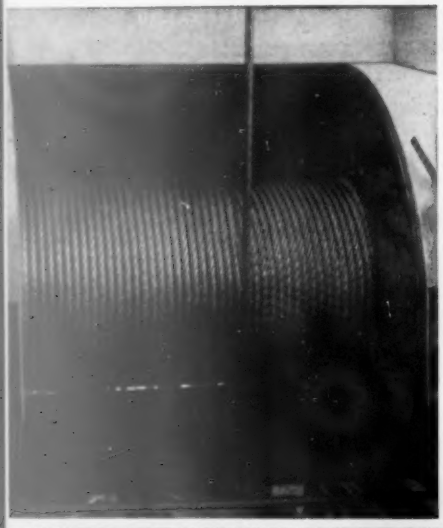
For More Information Circle No. 270 on Inquiry Card—Page 17

for tubing
that can take it—
and can take
any shape

Remember
GM STEEL TUBING
By Rochester Products

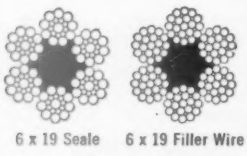
GM STEEL TUBING BY ROCHESTER PRODUCTS, DIVISION OF GENERAL MOTORS, ROCHESTER, N.Y.

For More Information Circle No. 273 on Inquiry Card—Page 17



ABRASION often gives wire rope a beating. Rope is squeezed under tremendous pressure on rotary drilling drums in Texas oil fields. In the Northwest it drags under heavy logs. In mining it is scraped over rocks to operate slushers. Everywhere it is rubbed severely on winches that do not wind smooth. Under such conditions Red-Strand 6 x 19 Seale wire rope lasts longer and saves money.

What can you do better with 6 x 19 Seale Red-Strand?



6 x 19 Seale 6 x 19 Filler Wire

6 x 19 Seale has the same strength and weight as the more frequently used 6 x 19 Filler Wire, but the arrangement and size of the wires is different. You can see in the diagrams that the outer wires are fewer in number and larger in size. They provide *high resistance to abrasion* and greater wearing quality with somewhat less flexibility.

It's the perfect rope for certain jobs. Would it solve a problem for you? Be less trouble? Save more money? A Leschen man is near you. Perhaps he can help. Leschen is providing *longer-than-expected* wire rope service to industry everywhere.

Send for the 64-page Leschen Wire Rope Handbook. It describes Seale and all other Red-Strand wire rope constructions.

LESCHEN WIRE ROPE DIVISION
The Watson-Stillman Company
(A SUBSIDIARY OF H. K. PORTER COMPANY, INC.)
St. Louis 12, Missouri

LESCHEN
HERCULES Red-Strand
WIRE ROPE

Devoe & Raynolds Co., Inc., New York, has named **H. B. Block** as Director of Purchases. Mr. Block was formerly with Merritt-Chapman & Scott Corp. It was also announced that **Orville P. Moss** and **Ernst Klinger** have been made Assistant Directors of Purchases. Mr. Moss has served in the purchasing department of Devoe & Raynolds for 20 years. Mr. Klinger, also a 20 year veteran with the company, has been in both technical and manufacturing divisions.

The new Director of Supplies for the Quebec Power Co., Quebec, Canada, is **Charles F. Scribner.** He joined

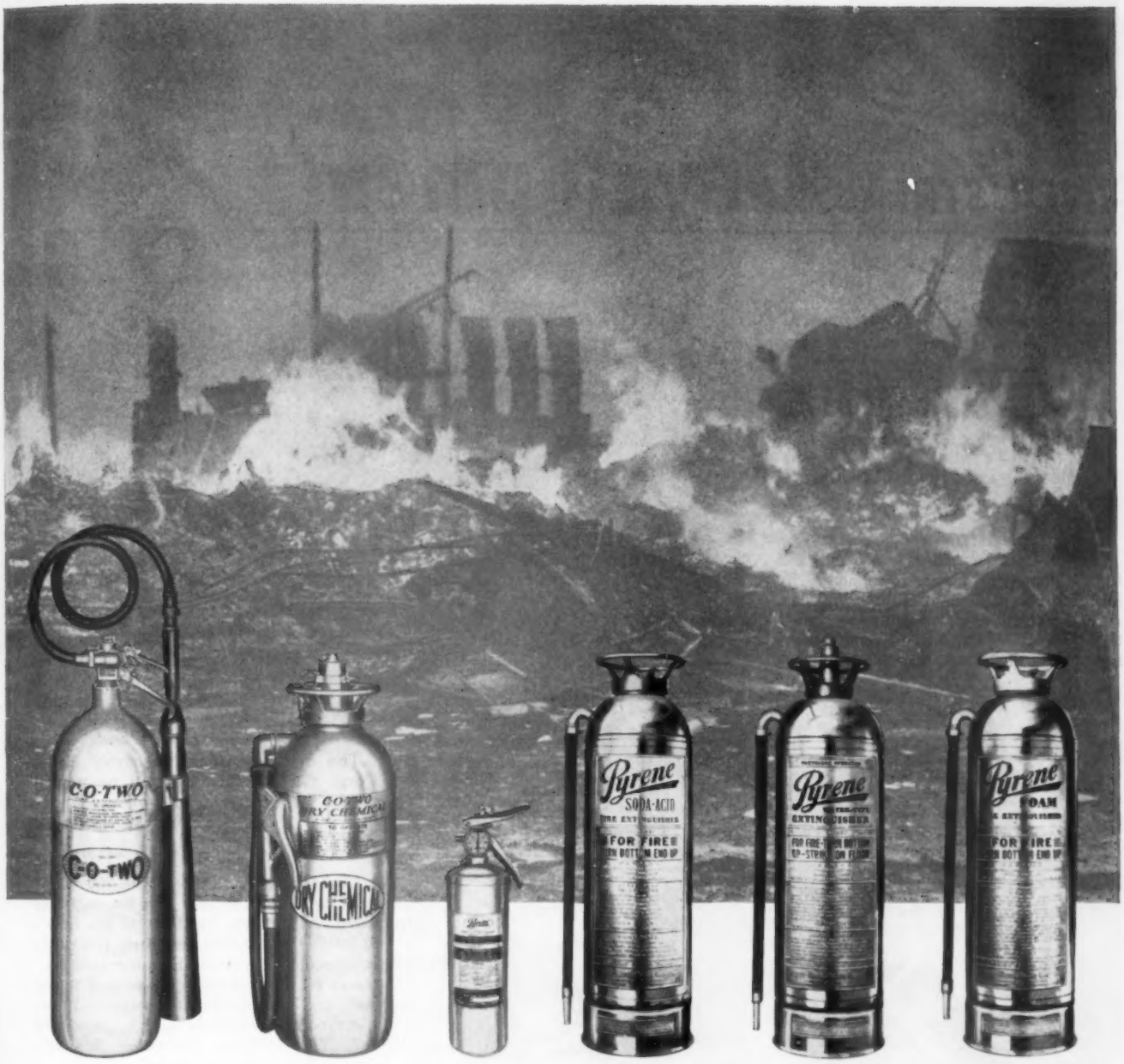
C. F. Scribner

the company in 1928 and worked in the payroll, accounting and purchasing departments before leaving for active duty with the RCAF. He returned to the company at the close of the war and was later named Chief of the Supply Division.

John S. Fair, Jr., has been appointed General Purchasing Agent of the Pennsylvania Railroad, with headquarters in Philadelphia, succeeding Elmer J. Lamneck, who has retired after more than 47 years of railroad service. Mr. Fair has been succeeded as Purchasing Agent by **Glenn J. Hoffman**, former Assistant Purchasing Agent at Philadelphia. Mr. Hoffman's duties have been assumed by **John P. Sherron**, former Assistant Purchasing Agent at Chicago. Mr. Fair joined the Pennsylvania in 1924, in the mechanical department. He went to the purchasing department in 1936 as office manager and was successively appointed Assistant Purchasing Agent, Assistant Stores Manager, Acting Purchasing Agent and Purchasing Agent. Mr. Hoffman has been with the railroad since 1930. Mr. Sherron's 20 years of railroad service have been largely spent in the purchasing department.

The promotion of **Robert W. Penman** to Purchasing Agent has been announced by Nor-Lake, Inc., Hudson, Wis.

For More Information Circle No. 274
←on Inquiry Card—Page 17



ALL TYPES...ANY CLASS FIRE!

Since different fire hazards require different types of fire extinguishers, PYRENE—C-O-TWO manufactures all types . . . the finest and most complete line on the market today.

When doing business with PYRENE—C-O-TWO, you receive unbiased advice on what is best for your particular fire hazards, whether class A, B or C. Also, there is a well-rounded sales engineering organization having nation-wide representation to render top quality service wherever you're located.

Don't take unnecessary chances . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts now!

PYRENE — C-O-TWO

NEWARK 1 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

COMPLETE FIRE PROTECTION

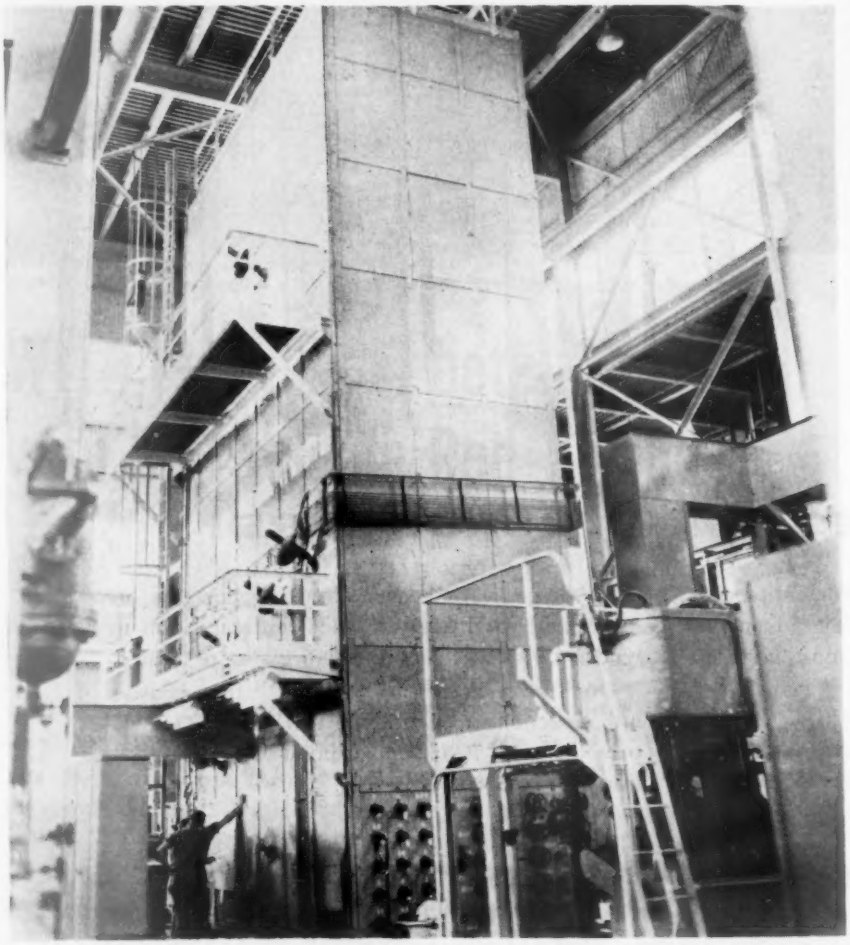
portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

For More Information Circle No. 277 on Inquiry Card—Page 17

INDUSTRIAL Developments

Norton Co., Worcester, Mass., will add to its electric furnace capacity by building a new plant in Huntsville, Ala. It is expected to be completed by late this year at a total cost of land, buildings and equipment estimated at $1,250,000. The plant will produce Magnorite refractory grain (fused magnesia), fused zirconia, Morbide refractory grain (Norton boron carbide) and special products for the Atomic Energy Commission.



Gases are "tapped off" at varying conditions of temperature in this four-story high separation column at the new Riverton, N. J., plant of Air Reduction Co., New York. The modern, main production building houses two producing columns, each capable of turning out 55 tons of liquid oxygen a day. Special trailers, tank trucks and railroad tank cars distribute Air Reductions' products which include: liquid oxygen, nitrogen, argon and some of the rare gases—neon, krypton and xenon.

Anaconda Wire & Cable Co., New York, has nearly completed its aluminum rod-rolling mill in Great Falls, Mont. Providing 80,000 sq. ft., the plant will house a new $1,000,000 automatically operated aluminum rod-rolling mill for processing aluminum in addition to wire drawing and stranding equipment.

The newly-acquired Accurate Brass Corp., Glendale, N. Y., will be moved to Bristol, Conn., by mid-year, according to an announcement from **Bristol Brass Corp.**

Completion of a new $500,000 plant has been announced by **Enamelstrip Corp., Allentown, Pa.** Part of the firm's $1,000,000 expansion program, the plant is expected to meet the increased demand for Enamelstrip pre-coated metal coil and an anticipated demand for Marvibond vinyl-to-metal laminate coil. The addition increases Enamelstrip's floor space by 48,000 sq. ft.

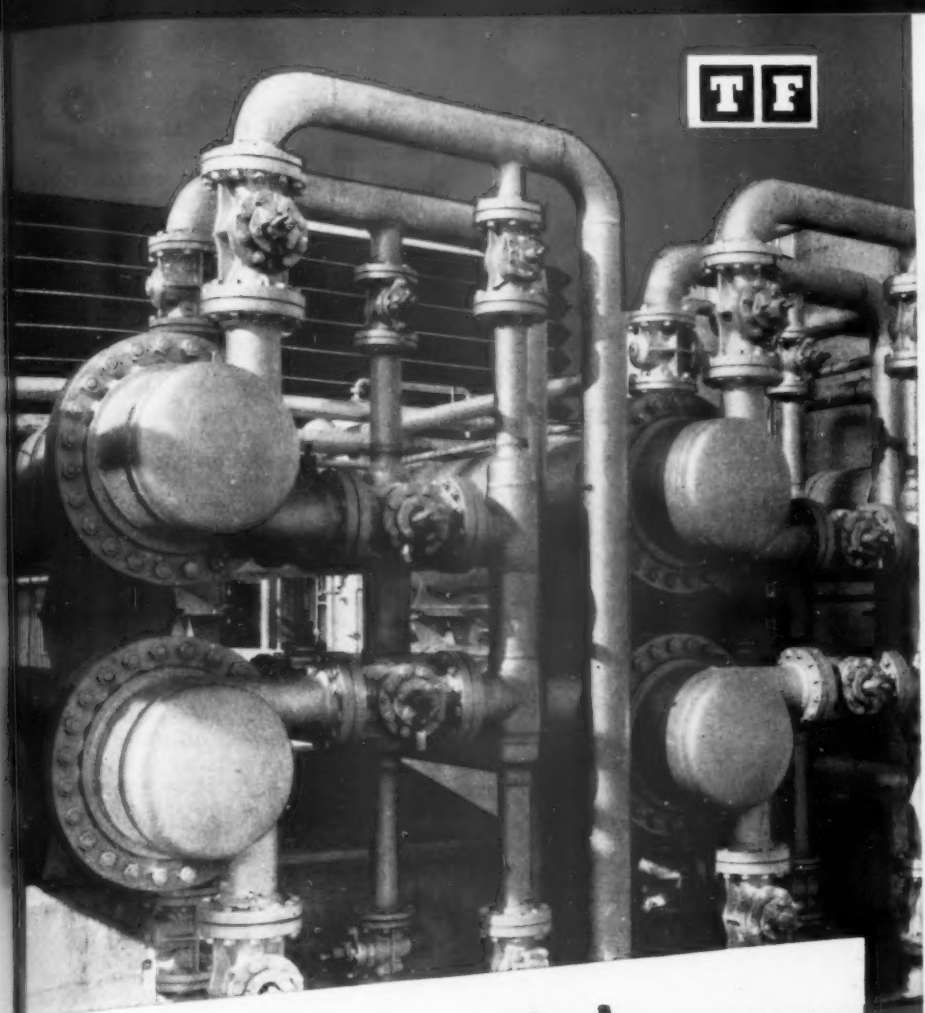
Formation of a new manufacturing subsidiary of **Borg-Warner Corp., Chicago,** has been announced. Known as Morse Chain of Canada, Ltd., it will occupy a plant to be built at Simcoe, Ont., and will produce automotive and industrial chain for the Canadian market. The plant is scheduled for completion by February.

Pressed Steel Car Co., Inc., New York, has changed its name to U. S. Industries, Inc.

Robert Gair Co., Inc., New York, is establishing a new corrugated box plant at Atlanta, Ga.

Micro Switch, a division of Minneapolis-Honeywell Regulator Co., Minneapolis, has opened a new research and product development center in Denver, Colo. No sales activities will be conducted at the Denver center.

(*Please turn to page* 246)



Taylor Forge all the way

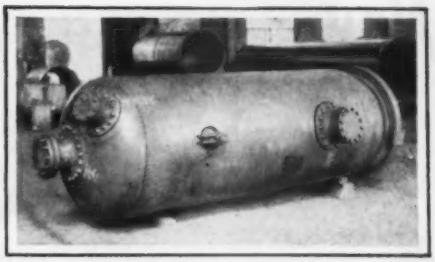
Throughout the power and process industries you will see hundreds of model installations like this where someone who wanted to be sure has specified Taylor Forge all the way through... WeldELLS,® flanges, welding necks, nozzles.

Whatever your needs—simple or complex—it will pay you to *use* all the way through, the products that have *led* all the way through.

See your Taylor Forge Distributor for up-to-the-minute facts.

TAYLOR FORGE

TAYLOR FORGE & PIPE WORKS • General Offices and Works: P.O. Box 485, Chicago 90, Illinois • Offices in all principal cities Plants at: Carnegie, Pa.; Fontana, Calif.; Gary, Ind.; Hamilton, Ontario, Canada



A New Development that's 37 Years Old

When you cut a hole in the shell of a pressure vessel you of course weaken it. But, how much?...or, to put it another way, how much reinforcement is necessary to make the shell surrounding an opening as strong as any other part of the shell?

In the old days of low pressure and over-sizing that hadn't been much of a problem. But when pressures began to climb fast (about 1915) it became a tough one.

Taylor Forge had already begun to relish problems like this: had pioneered the forged steel flange; was playing a major part in the development of flange and piping standards. So it isn't at all surprising that Taylor Forge again came forward with the solution — the first seamless forged steel pressure vessel nozzles.

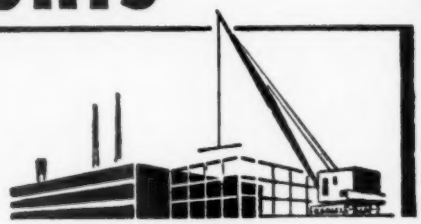
The research and testing that Taylor Forge put into designed pressure vessel outlets dates back to the riveted, sweep nozzles that are still giving safe, satisfactory service. But as riveting gave ground to welding, still more critical analyses were made to determine the exact requirements of nozzles designed for welding.

These many years of tests and studies were fully summed up in a paper entitled "Effects of Openings in Pressure Vessels" which was presented by the late J. Hall Taylor and Professor E. O. Waters at the June 1933 meeting of the ASME. It is still authoritative in this field.

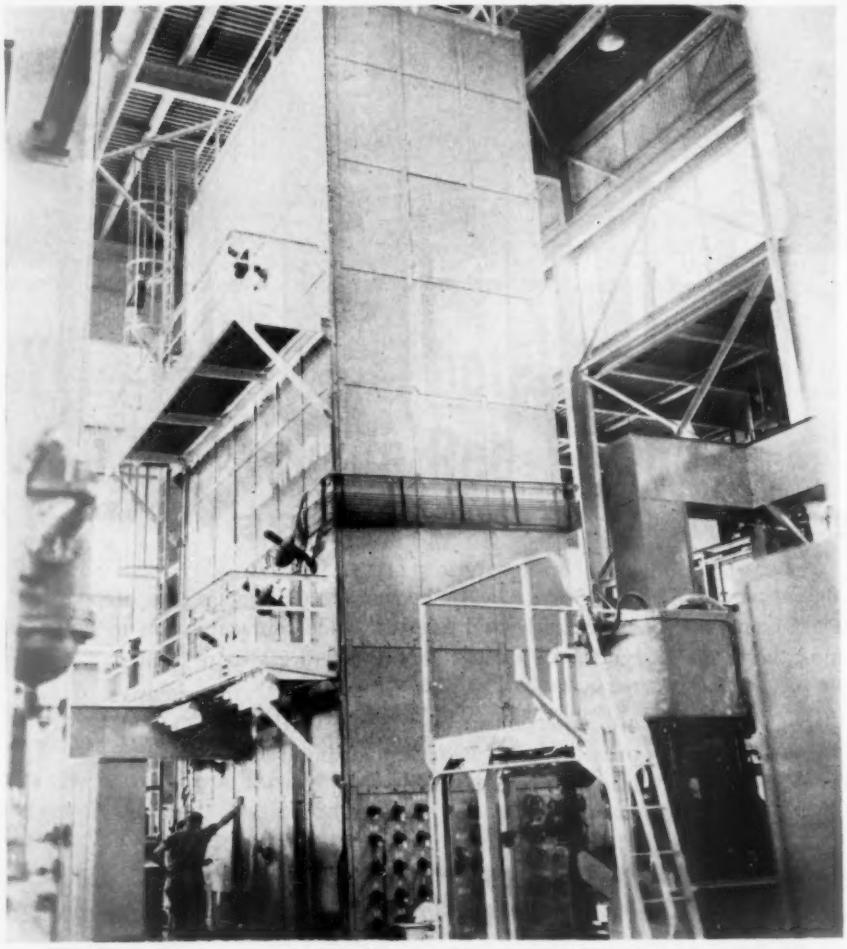
Yes, a new idea that is 37 years old! So thoroughgoing was its first development—so critical the steps taken to maintain its leadership—that today Taylor Forge Seamless Nozzles and Welding Necks are the standards of the entire pressure vessel and piping industry.

An episode in the story of Taylor Forge leadership in designed piping

INDUSTRIAL Developments



Norton Co., Worcester, Mass., will add to its electric furnace capacity by building a new plant in Huntsville, Ala. It is expected to be completed by late this year at a total cost of land, buildings and equipment estimated at $1,250,000. The plant will produce Magnorite refractory grain (fused magnesia), fused zirconia, Morbide refractory grain (Norton boron carbide) and special products for the Atomic Energy Commission.



Gases are "tapped off" at varying conditions of temperature in this four-story high separation column at the new Riverton, N. J., plant of Air Reduction Co., New York. The modern, main production building houses two producing columns, each capable of turning out 55 tons of liquid oxygen a day. Special trailers, tank trucks and railroad tank cars distribute Air Reductions' products which include: liquid oxygen, nitrogen, argon and some of the rare gases—neon, krypton and xenon.

Anaconda Wire & Cable Co., New York, has nearly completed its aluminum rod-rolling mill in Great Falls, Mont. Providing 80,000 sq. ft., the plant will house a new $1,000,000 automatically operated aluminum rod-rolling mill for processing aluminum in addition to wire drawing and stranding equipment.

The newly-acquired Accurate Brass Corp., Glendale, N. Y., will be moved to Bristol, Conn., by mid-year, according to an announcement from **Bristol Brass Corp.**

Completion of a new $500,000 plant has been announced by **Enamelstrip Corp., Allentown, Pa.** Part of the firm's $1,000,000 expansion program, the plant is expected to meet the increased demand for Enamelstrip pre-coated metal coil and an anticipated demand for Marvibond vinyl-to-metal laminate coil. The addition increases Enamelstrip's floor space by 48,000 sq. ft.

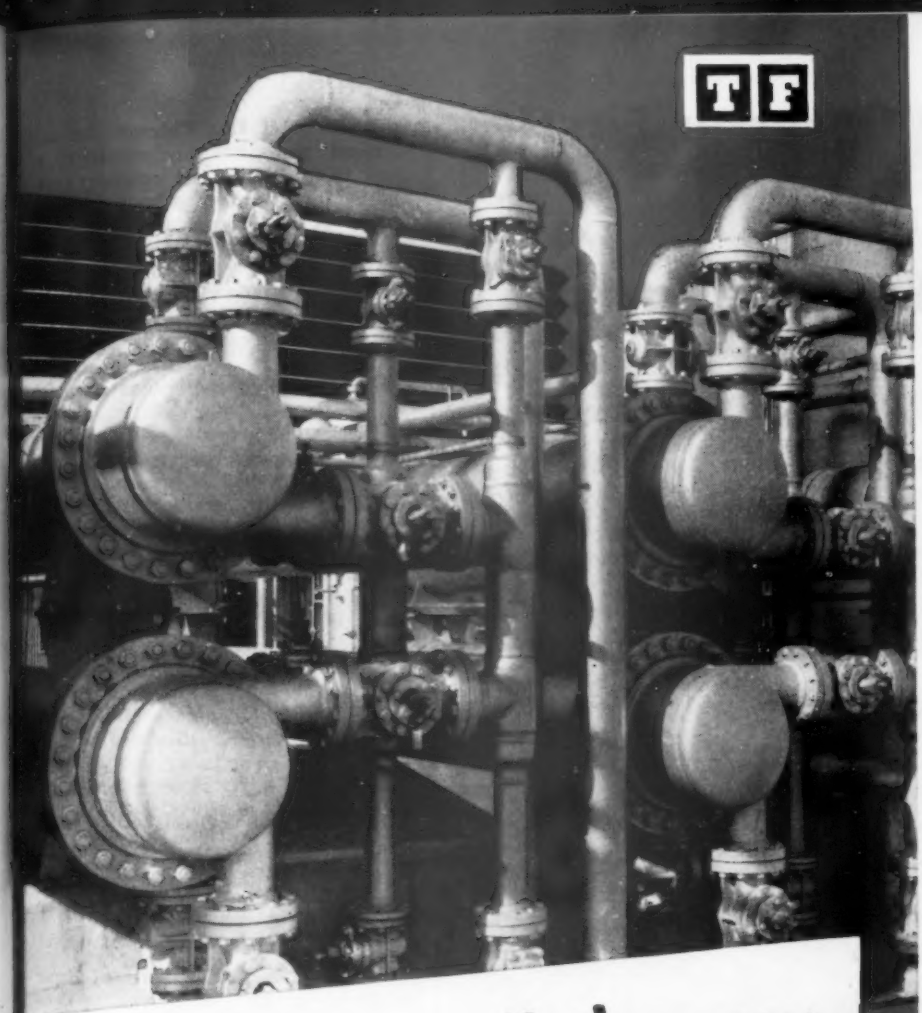
Formation of a new manufacturing subsidiary of **Borg-Warner Corp., Chicago,** has been announced. Known as Morse Chain of Canada, Ltd., it will occupy a plant to be built at Simcoe, Ont., and will produce automotive and industrial chain for the Canadian market. The plant is scheduled for completion by February.

Pressed Steel Car Co., Inc., New York, has changed its name to U. S. Industries, Inc.

Robert Gair Co., Inc., New York, is establishing a new corrugated box plant at Atlanta, Ga.

Micro Switch, a division of Minneapolis-Honeywell Regulator Co., Minneapolis, has opened a new research and product development center in Denver, Colo. No sales activities will be conducted at the Denver center.

(*Please turn to page* 246)



Taylor Forge all the way

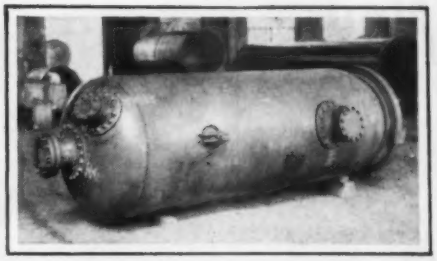
Throughout the power and process industries you will see hundreds of model installations like this where someone who wanted to be sure has specified Taylor Forge all the way through...WeldELLS,® flanges, welding necks, nozzles.

Whatever your needs—simple or complex—it will pay you to *use* all the way through, the products that have *led* all the way through.

See your Taylor Forge Distributor for up-to-the-minute facts.

TAYLOR FORGE

TAYLOR FORGE & PIPE WORKS • General Offices and Works:
P.O. Box 485, Chicago 90, Illinois • Offices in all principal cities
Plants at: Carnegie, Pa.; Fontana, Calif.; Gary, Ind.; Hamilton, Ontario, Canada



A New Development that's 37 Years Old

When you cut a hole in the shell of a pressure vessel you of course weaken it. But, how much?...or, to put it another way, how much reinforcement is necessary to make the shell surrounding an opening as strong as any other part of the shell?

In the old days of low pressure and over-sizing that hadn't been much of a problem. But when pressures began to climb fast (about 1915) it became a tough one.

Taylor Forge had already begun to relish problems like this: had pioneered the forged steel flange; was playing a major part in the development of flange and piping standards. So it isn't at all surprising that Taylor Forge again came forward with the solution — the first seamless forged steel pressure vessel nozzles.

The research and testing that Taylor Forge put into designed pressure vessel outlets dates back to the riveted, sweep nozzles that are still giving safe, satisfactory service. But as riveting gave ground to welding, still more critical analyses were made to determine the exact requirements of nozzles designed for welding.

These many years of tests and studies were fully summed up in a paper entitled "Effects of Openings in Pressure Vessels" which was presented by the late J. Hall Taylor and Professor E. O. Waters at the June 1933 meeting of the ASME. It is still authoritative in this field.

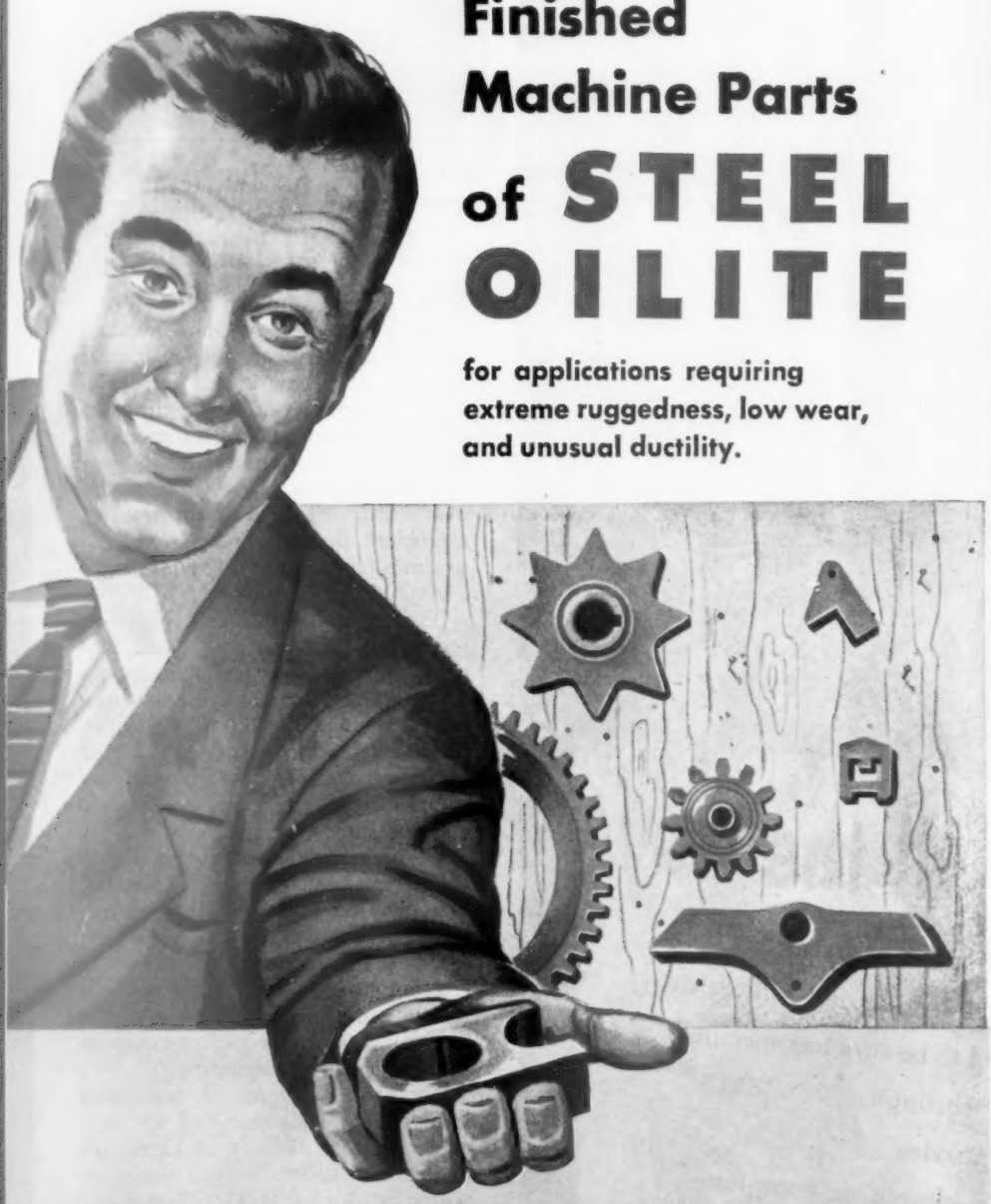
Yes, a new idea that is 37 years old! So thoroughgoing was its first development—so critical the steps taken to maintain its leadership—that today Taylor Forge Seamless Nozzles and Welding Necks are the standards of the entire pressure vessel and piping industry.

An episode in the story of Taylor Forge leadership in designed piping

NOW... Another Chrysler First!

Finished Machine Parts of STEEL OILITE

for applications requiring extreme ruggedness, low wear, and unusual ductility.



If you've passed up using metal powder finished machine parts because your applications require units of greater strength and ductility than they normally provide, then you will want to investigate STEEL OILITE.

Here is a new, yet thoroughly proved, metal powder product that is saving users from 35% to as high as 96% over conventionally produced precision finished machine parts.

STEEL OILITE Finished Machine Parts provide revolutionary new strength and ductility that makes these big savings practical on countless new applications where component parts need to be especially tough.

Write today for the New Bulletin on STEEL OILITE just published. It's yours for the asking. Please request Bulletin STM-54.

A CHRYSLER OILITE PRODUCT

CHRYSLER CORPORATION
AMPLEX DIVISION
Dept. B-155 Detroit 31, Mich.

FIELD ENGINEERS THROUGHOUT THE UNITED STATES AND CANADA

OILITE PRODUCTS INCLUDE: Bearings, Finished Machine Parts, Cored and Solid Bars, Permanent Filters and Special Units of Non-Ferrous and Ferrous Metals and Alloys including Stainless Steel.

Inland Steel Co., Chicago, has announced plans for an expansion of more than 60% in the company's capacity to produce galvanized steel sheets. A third continuous line for their production by a process for coating sheets with zinc is being installed at Inland's Indiana Harbor, Ind., works. Work is scheduled for completion by the end of the year. The projected line is scheduled to have the capacity to produce 80,000 or more tons annually.

A $3,500,000 expansion, which will more than double the company's foam rubber production, is well underway, according to **the Sponge Products Division, B. F. Goodrich, Akron, Ohio.** Located in Shelton, Conn., the plant, scheduled for completion by December 1955, will add 460,000 sq. ft. to the New England facilities.

A combination sales office and warehouse building is being built in San Francisco by **Reynolds Metals Co., Louisville, Ky.** The structure will be built largely of aluminum and will have about 38,000 sq. ft. of warehouse area and 7,500 sq. ft. of office space.

The Bristol Co., Waterbury, Conn., manufacturer of industrial instruments, has been purchased by **American Chain & Cable Co., Inc., Bridgeport.**

The sale of the American Paper Goods Co., Kensington, Conn., to **Continental Can Co., New York,** has been announced.

Construction is under way on a new $34,000,000 plate glass producing plant in Cumberland, Md., by **Pittsburgh Plate Glass Co.** Designed for straight line production, the plant will be nearly three quarters of a mile long. It is estimated it will take nearly two years to get the ultramodern facility in operation.

A new distribution center and warehouse to serve the New York metropolitan area has been opened by **United States Rubber Co.** at 24-01 Brooklyn-Queens Expressway West, Long Island City. It will serve the company's tire and mechanical goods division.

An ultramodern, 160,000 sq. ft. corrugated box factory is being built in Gastonia, N. C., by **Hinde & Dauch Paper Co., Sandusky, Ohio.** It is scheduled for completion by May or June.

Dravo Corp., Pittsburgh, has added iron ore sintering and pelletizing equipment to its line of industrial machinery. It has been made possible by an exclusive licensing agreement with Lurgi Gesellschaft für Chemie and Huttenwesen, M.B.H., Frankfurt, A.M., Germany.

Tabor Mfg. Company, manufacturers of foundry molding machines and equipment, has become a division of **Turbo Machine Co., Lansdale, Pa.**

For More Information Circle No. 279
←on Inquiry Card—Page 17

A Tiger for Work

SIMONDS NEW Sabre Tooth BAND SAW

FOR WOOD, PLASTICS, PLYWOOD, AND NON-FERROUS METALS, here's a new band saw with hard teeth and a flexible back designed for extra long life and fast, free cutting. Simonds new Sabre Tooth Blade cuts so easily — work practically feeds itself.

Made of tough alloy steel, this specially designed tooth with a hook actually holds a keen cutting edge far longer, gives better service all along the line.

You'll find a Simonds Sabre Tooth does *more work* at *lower cost* than your present blade. Try it on your next job and see how it can cut your blade and production costs. All standard sizes in coils or welded-to-length are now available from your Industrial Supply Distributor's stock.

SIMONDS
SAW AND STEEL CO.
FITCHBURG, MASS.

For Fast Service from Complete Stocks

Call your

SIMONDS Industrial Supply DISTRIBUTOR

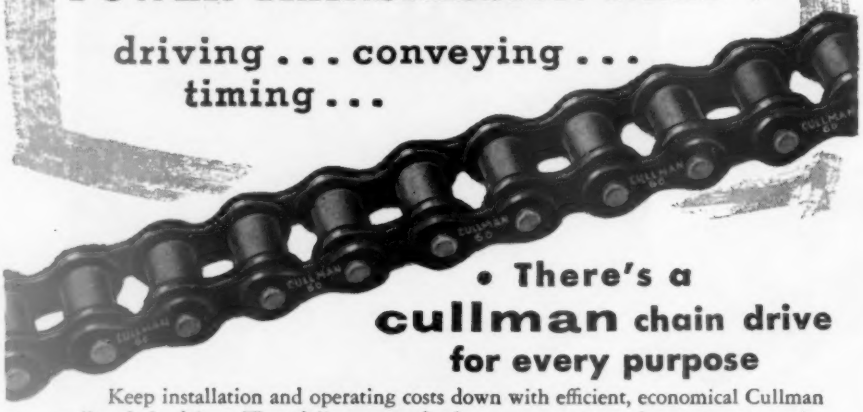
Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon • Canadian Factory in Montreal, Que. • Simonds Divisions: Simonds Steel Mill, Lockport, N. Y. • Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada

For More Information Circle No. 282 on Inquiry Card—Page 17

for Chain Drive users

WHAT'S YOUR POWER TRANSMISSION NEED?

driving . . . conveying . . . timing . . .



• There's a cullman chain drive for every purpose

Keep installation and operating costs down with efficient, economical Cullman roller chain drives. They deliver more for less . . . save space, increase your equipment capacity, absorb shock loads.

For more machinery production and guaranteed, long trouble-free service specify Cullman on your next chain drive installation. Why not take advantage of 60 years of experience in engineering and producing the right chain drive?

cullman
POWER TRANSMISSION ROLLER CHAINS AND SPROCKETS
33553

Write today for Catalog 51, or see your local Cullman distributor.

REPRESENTATIVES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES
CULLMAN WHEEL COMPANY, 1342 ALTGELD STREET, CHICAGO 14, ILLINOIS

For More Information Circle No. 283 on Inquiry Card—Page 17

MITCHELL-BRADFORD

. . . a name synonymous with progressive leadership in the Metal Finishing Field

BLACK MAGIC Black Finish for Steel
BLACK MAGIC Black Finish for Zinc
BLACK MAGIC Black Finish for Cadmium
BLACK MAGIC S.S. Black Finish for stainless steels, cast and malleable irons
MAGIC NEUT Neutralizer after Black Oxide finishing
WITCH DIP REGULAR Semi-drying wax finish
WITCH DIP #2 Gloss, semi-gloss, dull, hard drying wax finish
WITCH OIL Water displacing, rust preventative
WITCH OIL "B" Heavy duty, water displacing, rust preventative
PIK-AIDE Pickling Addition agent
QUICK PIK Dry acid
COMPOSITION D Rust preventative, solvent, detergent cleaner, rancidity retardent
MAGIC DRY A plating necessity
MAGICLENE #2 Rust preventative, rust remover, cleaner and paint base
SOAK CLEANERS For all metals
ELECTROLYTIC CLEANERS For all metals
SOLVENT CLEANERS For removing heavy soils
PROCESSING TANK EQUIPMENT Automatic Temperature Controls
COMPLETE LINE of Heat Treating Salts, Carburizing, Tempering, Neutral, Nitriding, etc.

Technical literature and bulletins on any of the following products available on request.

Mitchell-Bradford

The MITCHELL-BRADFORD CHEMICAL CO.
2448 Main St. Stratford, Conn.

QUALITY PRODUCTS OF CHEMICAL RESEARCH

For More Information Circle No. 284 on Inquiry Card—Page 17

NEWS OF YOUR SUPPLIERS

Three major personnel promotions have been made by **American Potash & Chemical Corp., Los Angeles**. George S. Wheaton, formerly assistant vice president of the company's Eston Chemicals Division, has been made vice president of that division. Thomas F. Edson, formerly assistant vice president of research and development, has been named to the newly-created post of vice president in charge of special engineering projects. And, Richard J. Hefler, secretary of the company, goes into the new post of assistant to the president.

A. T. Olsson

A. T. Olsson has been named assistant sales manager of **Acheson Colloids Co., Port Huron, Mich.**

The **Bridgeport Brass Co., Bridgeport, Conn.**, has appointed N. Bross Decker as manager of its Boston district sales office.

Paul Garmus, graphitic steel field engineer for **Timken Roller Bearing Co., Canton, Ohio,** has been transferred to the company's Los Angeles office. He will handle the sale of Timken graphitic tool steel on the west coast.

Four salesmen have been appointed to work out of the new Lancaster, Pa., warehouse of **Jones & Laughlin Steel Corp., Pittsburgh.** For the Lancaster area it will be Carl R. Wittlinger, Jr.; William H. Williamson will work in the Harrisburg area; Charles E. Rice, Jr., in York; and Thomas W. McClure, Jr., for Hagerstown, Md.

In a series of moves at the Los Angeles plant of **Joseph T. Ryerson & Son, Inc., Chicago,** the following appointments have been made. C. D. D'Amico was named manager of sales to succeed C. H. Hallett, who moved to the Chicago plant for special assignment. Filling the post of manager of the stainless steel department, vacated by Mr. D'Amico, is F. X. Kinzie, a former sales representative.

balanced design

MEANS EVERY DETAIL PRECISELY RIGHT FOR BETTER, FASTER PRECISION MEASURING

Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR — prompt delivery, dependable service, quality products

No. T 230-1
No. T 230
230-F and 231-F with DIRECT FEEL plus FRICTION THIMBLE
230 and 231 with DIRECT FEEL plus RATCHET STOP
THE L. S. STARRETT CO. ATHOL, MASS. U.S.A. MADE IN U.S.A.

only **Starrett** MICROMETER CALIPERS give you these 12 BIG FEATURES

All in perfect balance for

- Easy Handling
- Faster Measuring
- Easy Reading
- Lifetime Accuracy

1. **BALANCED DESIGN** — Advanced Design Throughout with Correct Thimble Diameter Insures Perfect Balance, Easy Handling and Better Readability.
2. **NO-GLARE SATIN CHROME FINISH** — On Thimble and Sleeve of all Micrometers and also on Frame of all Full Finish Micrometers. Easy to Read — Eliminates Squinting and Eye Strain. Highly Resistant to Stains, Corrosion and Wear.
3. **HI-MICRO LAPPED MIRROR FINISH** — On Faces of Anvil and Spindle. Insures More Accurate Measurements. Also Available with Tungsten Carbide Faces at slight additional cost.
4. **ONE-PIECE SPINDLE** — Extra-Rigid Integral Construction for Long, Accurate Life.
5. **EXTRA HARD THREADS WITH EXTREMELY FINE LEAD ACCURACY** — Special High Carbon Steel Gives Harder Threads Which are Hardened, Stabilized and Precision Ground from the Solid Under Temperature Controlled Conditions to Insure Lasting Precision.
6. **TAPERED FRAME** — Permits Measurements in Narrow Slots and Tight Places. Standard on All Full Finish Outside Micrometers.
7. **RIGID, ONE-PIECE FRAME** — Barrel is Integral with Frame for Maximum Rigidity, Accuracy and Long Life.
8. **EASY TO READ** — Large Diameter Thimble and Sleeve with Distinct Black Figures and Graduations Against Satin Chrome Finish. Measurements Easy to Read Under Any Illumination.
9. **QUICK READING FIGURES** — Every Graduation Numbered For Quick, Positive Identification.
10. **CONVENIENT DECIMAL EQUIVALENTS** — of 8ths, 16ths, 32nds and 64ths on Frame or Thimble of All Micrometers.
11. **QUICK, EASY ADJUSTMENT** — Only Two Simple Adjustments Maintain Starrett Accuracy.
12. **RATCHET STOP OR FRICTION THIMBLE** — Permits Consistent Measurements Independent of "Feel". **LOCK NUT** — Permits Locking of Spindle At Any Reading. Available At Slight Additional Cost.

Starrett®

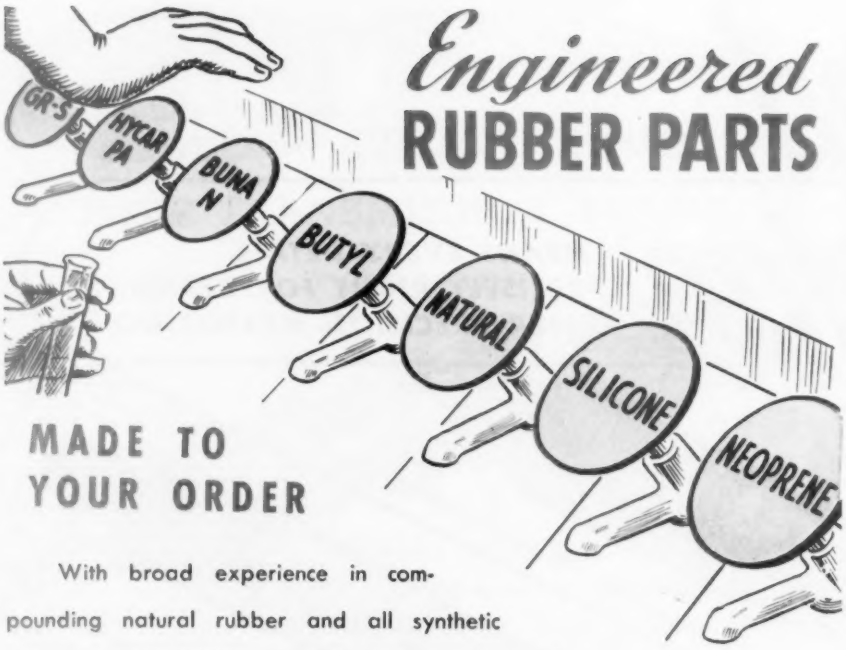
"WORLD'S GREATEST TOOLMAKERS"

STARRETT TOOLS

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS • DIAL INDICATORS • STEEL TAPES PRECISION GROUND FLAT STOCK • HACKSAWS, BAND SAWS and BAND KNIVES

THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

For More Information Circle No. 287 on Inquiry Card—Page 17



Engineered RUBBER PARTS

MADE TO YOUR ORDER

With broad experience in compounding natural rubber and all synthetic polymers, ACUSHNET specializes in custom-engineered "precision" molded rubber parts made exact to specifications. None are stocked.

If molded rubber parts are to perform a service vital to the efficiency, longevity and reputation of your products, discuss your requirements direct with our engineers. Their collective, specialized knowledge of mold design, modern compounding techniques and production efficiencies can be applied to your problems with effective, economical results. Especially valuable is this knowledge when applied in the initial stages of your design.

Acushnet PROCESS COMPANY

Send for your copy of the widely used "Acushnet Rubber Handbook", a comprehensive, practical rubber data reference. Please make request on your company letterhead.

Address all communications to 770 Belleville Ave., New Bedford, Mass.

For More Information Circle No. 288 on Inquiry Card—Page 17

For Better Requisitions

(*Continued from page* 116)

ment. One of these is for the person who issued the sub-requisition at the inception of the transaction. This is to keep all persons concerned posted on the progress of the transaction, to eliminate anxiety and unnecessary inquiries.

It was emphasized that all information from the department's copy of the purchase order should be entered on their copy of the requisition, for future reference. This includes any change in the description of the items, in accordance with the buyer's editing.

A specified delivery time is shown on every order. This is to help receiving departments in anticipating deliveries. If delivery is not made within the specified time, they are urged to inform the Purchasing Department expediter, who will follow through. When calling the expediter for information on the status of any order, the purchase order or requisition number should be supplied to facilitate identification.

The chapter on Purchasing Policy in the newly revised Purchasing Department Manual (which is furnished to all departments) was recommended to all employees to read for general information. Of special interest to those who issue requisitions is the list of commodity assignments to the buying personnel. Classes of commodities handled by each buyer are a quick reference for anyone having inquiries on materials or supplies they have requisitioned.

Evaluating the Project

At the conclusion of the class session, the groups were conducted through the Purchasing Department, and then to the Tabulating Division where the purchase orders are typed and the punched card records prepared, to see at first hand how their requisitions are handled. Many employees who frequently contact the Purchasing Department had never actually visited it in person or seen it in operation.

There was a lively question and discussion period at each of the sessions, and much worthwhile information emanated from this. The benefit was mutual, for it was apparent in this discussion that many things which are taken for granted by the purchasing personnel are not understood by those who issue requisitions. Several valuable suggestions came from the classes such as

(*Please turn to page* 258)

Dayton PM* Pays $4,800 Bonus

. . . in improved plant operation with Dayton V-Belts!

**Preventive Maintenance Program*

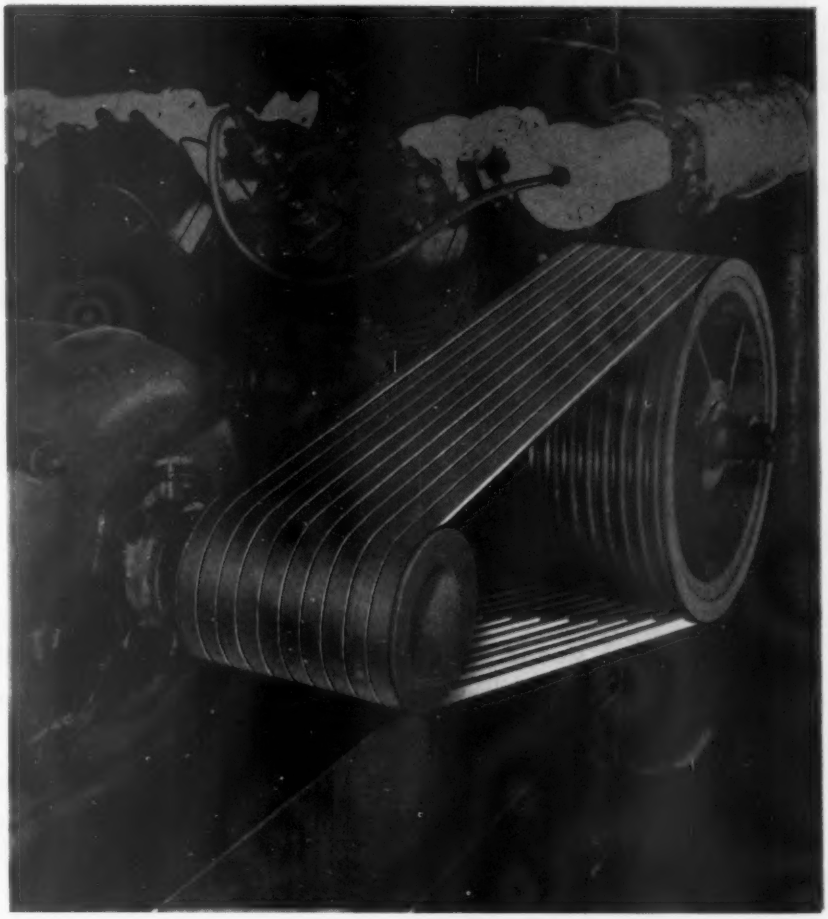
You, too, can avail yourself of a bonus in increased plant operation — $4,899.90 in the case of this pharmaceutical company —the amount depending on the V-Belt drives peculiar to your operation. The secret is in the Dayton P.M. Program, combined with efficient, low cost, dependable power of Dayton V-Belts. It's a two-way program designed to give you increased production, fewer or no costly shutdowns. The result is improved plant operation that pays you an important bonus in time and labor saved, plus greater output.

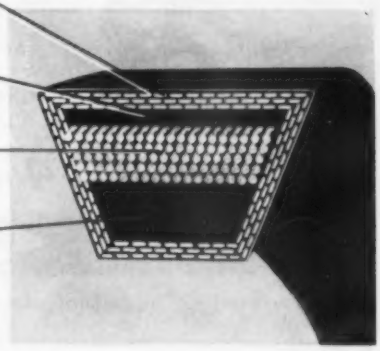
Here's how Dayton P.M. made possible $4,899.90 in bonus savings to the operation shown here.

This refrigeration compressor (right), equipped with 10 C-section Dayton V-Belts, must maintain the Capsule Banding Department at a specific temperature and humidity at all times. When this important unit is down for belt replacement during a production run, the *minimum* costs add up like this:

Cost of new belts	$ 74.90
Cost of labor	15.00
Cost of lost production during down time	4,810.00
Total cost	$4,899.90

With Dayton's P.M. Program and the right type and size of V-Belts, such costly down time can be practically eliminated. More than that, installation of Dayton's longer lasting V-Belts will easily extend the interval between belt changes as much as 50%, adding extra savings by decreasing belt replacement. Call your Dayton Distributor for details — he'll be glad to show you how you can get a bonus in improved operation for your plant — or write direct to Dayton Rubber Co., Industrial Division, Dept. 72, Dayton 1, Ohio.





All-Weather Cover of "Hi-Twist" fabric, rubber-impregnated and bias-cut, for maximum flexibility and wear.

Exclusive Dayton 327-V Blend, natural and synthetic rubbers, for easy stretch with instant recovery in tension section.

Thoro-Bonded Rayon Cords, with each filament actually rubber-coated, for greatest tensile strength and flexibility.

Exclusive Dayton 812-V compound in compression section, for perfect crosswise rigidity, greatest flexibility, greater strength, longer life.

See "Belting" in yellow pages for your local Dayton Distributor

© D. R. 1954

Dayton Rubber

Since 1905

World's Largest Manufacturer of V-Belts

Industrial Division

DAYTON RUBBER COMPANY • DAYTON 1, OHIO

For More Information Circle No. 291 on Inquiry Card—Page 17

in Stainless Steel Tube Sheet

Illustrated is a rugged drilling operation that uses the durability and cutting speed of standard Whitman & Barnes High Speed Drills. This 446 stainless steel tube sheet for a special heat exchanger in a chemical plant requires 602 holes 2 11/16" in diameter be drilled through the 2½" depth of the sheet. W & B drills are operated without regrinding for approximately four hours at 69 R.P.M. and with .012" feed. For the best in drilling performance on your every operation—specify W & B.

Call your W & B distributor for best service and highest quality

He can save you money by supplying from his stock . . . what you need when you need it!

"Makers of Fine Tools Since 1848"

DRILLS, REAMERS, COUNTERSINKS, TOOL BITS — W&B — COUNTERBORES, CARBIDE TOOLS, SPECIAL TOOLS

Please send me additional information

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

WHITMAN & BARNES

4001B PLYMOUTH ROAD • PLYMOUTH, MICHIGAN

NEW YORK • CHICAGO • LOS ANGELES • ATLANTA

For More Information Circle No. 292 on Inquiry Card—Page 17

For Better Requisitions

(*Continued from page* 254)

additional items to be carried in stores, and revision of the requisition form to make it more convenient to use.

The meetings were definitely of great value in establishing a better mutual understanding and in improving requisition writing practice—so much so that it has been decided to repeat these sessions annually.

* * *

Cost-Volume Relationship

(*Continued from page* 89)

Nobody has been hurt by this negotiation. Quite the contrary. We have simply put the overhead cost factors to work for us instead of against us, through the increased volume which the lower price assures. Our profits are more than three times as great as they would have been with the straight 5% price cut the salesman suggested as the means of retaining the old volume; and the actual price cut is more than three times as great as suggested, assuring us of a sound competitive position as well.

Is this a case of paper profits and cost reduction by juggling our bookkeeping methods? Not at all. It is the practical application of the cost-volume relationship which is fundamental to all production—and to all purchasing.

Although this example of pins and plugs is a theoretical and somewhat oversimplified one, it illustrates sound principles which an aggressive buyer can frequently use to advantage. Five situations in which a knowledge of the relation between cost and volume can be useful are:

1. When business volume is rising, the buyer can intelligently try to negotiate price reductions, since unit costs for the supplier are usually declining.

2. Conversely, when business volume is declining, even though the lower volume tends to work to the buyer's disadvantage, competition is intensified and tends to hold down price increases. Strictly from the manufacturing cost standpoint, the larger supplier may be the most advantageous source under these circumstances, but there are potent opportunities to help the smaller supplier within the competitive pattern as illustrated by the "pins and plugs" example.

3. A buyer alert to opportunities for cost reductions can effect them

(*Please turn to page* 262)

You can simplify purchasing . . . improve design . . . speed production

with improved C-D-F DILECTO® laminates

Only C-D-F, the Continental-Diamond Fibre Company, makes Dilecto laminated plastic, just as only Cadillac makes a Cadillac. Dilecto is 50 different materials with more combinations and variations in desired properties than we can tell you here.

But Dilecto has three important qualities that you should think about if you buy, design, or machine laminated plastics.

DILECTO HAS HIGH MECHANICAL STRENGTH

Mechanical strength is frequently an important determining factor in the selection of an insulating material. Insulating parts used in large electrical power equipment are frequently bulky. The high mechanical strength of Dilecto helps reduce size-dimensions of insulating parts without danger of failure. Instruments, meters and small motors frequently require very small insulating parts which must withstand comparatively large mechanical stresses. Insulation for use in high frequency circuits should have a minimum bulk factor for minimum dielectric losses. Dilecto fulfills these requirements with a combination of high mechanical strength and low loss factor, characteristic of the better C-D-F electrical grades.

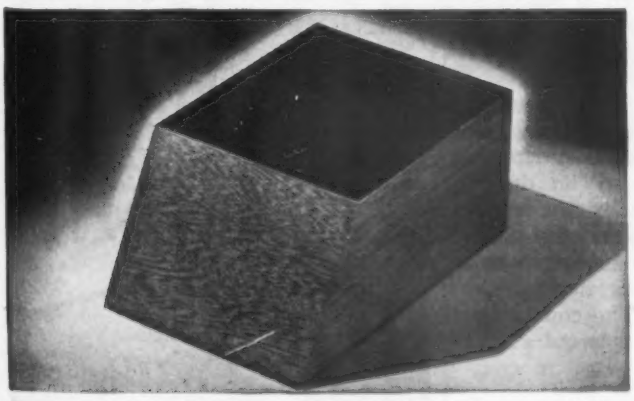
So C-D-F selects for your Dilecto insulation grade the correct, highest quality base material, paper, cotton, nylon, glass. These are used in combination with improved penetrating resins: Improved Phenolic, New Melamine, New Silicone, New Teflon, all synthetic, well polymerized resins.

Both the base and the resin are good insulators by themselves. But C-D-F sells them to you in an improved, practical form . . . Dilecto. Uniform sheets, tight tubes, strong rods, close tolerance machined and formed specialties, high bond strength metal clads.

Why does Dilecto combine so well mechanical strength with dielectric strength and dimensional stability? Because Dilecto is almost homogeneous, a true blend of resin and base.

DILECTO IS ALMOST HOMOGENEOUS

A poor laminate absorbs moisture at its edges, loses its insulating properties fast. Entrapped moisture and other volatiles within the cured structure causes inconsistent dielectric strength, with ultimate puncture and breakdown.



Punch press and bench saw operators know how much time and material is saved when the laminated plastic is *uniform* and *homogeneous* in nature like Dilecto.

DILECTO IS IMPROVED

Yes, C-D-F Dilecto is an improved laminated plastic, due to high standards and advances in resin and manufacturing techniques. It is watched by skilled workers in our modern plants, checked against rigid standards . . . C-D-F standards . . . by our quality control people. It is easy to machine, and the C-D-F shops are doing a booming business in specialties.

Table I—Typical Improved Phenolic Laminates

Commercial designation[a]	Resin	Filler	Improved properties	Improvement due to:
MEC-5	Phenolic	Nylon fabric	Insulation resistance; moisture resistance	Filler
XXHV-2[b]	Phenolic	Paper	High dielectric strength parallel to laminations	Resin and manufacturing technique
CRD	Phenolic	Cotton mat	Better machining	Filler
XXXP-26[b]	Phenolic	Paper	Insulation resistance; moisture resistance	Resin and manufacturing technique
C-92	Xylenol[c]	Cotton fabric	Alkali resistance	Resin
CF	Modified phenolic	Cotton fabric	Postforming	Resin

[a] All grades are Continental-Diamond Fibre Company.
[b] Resins have improved penetrating properties and the manufacturing techniques use these properties to provide better impregnation of the filler. Since thorough impregnation eliminates entrapped moisture and air, greater moisture resistance and better dielectric properties are attained. Manufacturing techniques also provide suitable temperature control during the curing stage to assure uniform quality and optimum property values in the finished laminate.
[c] Xylenol is essentially a dimethyl phenol.

—from Electrical Manufacturing Article "Wider Design Opportunities with the NEW Phenolics", Part II.

The next time you think of laminated plastics, the name to remember is C-D-F Dilecto. The improved, high strength, uniform material that makes insulation buying and using more a science, less a puzzle. New grades, new applications, new savings are just part of the Dilecto success story. Look up the facts in Sweet's Design File, or write for catalog. Send us your blueprint for quotation . . . tell us your design dream . . . C-D-F wants to work with you.

CDF Continental-Diamond Fibre

CONTINENTAL-DIAMOND FIBRE COMPANY
NEWARK 41, DELAWARE

(Advertisement)

For More Information Circle No. 295 on Inquiry Card—Page 17

C/R
JAW-HEAD

The best "soft" hammer your money can buy!

Tough, resilient water buffalo faces deliver plenty of power with full protection for delicate parts and finishes. Faces are easily replaced, and comfortable Safety-Flare handle gives you non-slip grip. Work goes better with a C/R RAWHIDE Jaw-Head. See for yourself.

CHANGE FACES IN SECONDS

Available from leading industrial suppliers. Also C/R Rawhide mallets and Rawhide mauls. For further information write Dept. 22.

CHICAGO Rawhide MFG. CO.
1301 Elston Ave., Chicago 22, Ill.
In Canada: Super Oil Seal Mfg. Co., Ltd., Hamilton, Ontario

For More Information Circle No. 296 on Inquiry Card—Page 17

Cost-Volume Relationship

(*Continued from page* 258)

by combining orders for similar items with a supplier and negotiating lower prices on the basis of the greater over-all volume.

4. Material substitutions or specification changes which permit similar items to be manufactured with identical facilities, can frequently lead to savings resulting from the higher combined volume and reduced unit costs.

5. On the positive side, shopping around for "special situations" wherein his business might lead to over-all internal cost savings for a supplier, frequently enables the buyer to effect substantial cost savings which are also to the supplier's advantage rather than at his expense.

* * *

Price Laws

(*Continued from page* 126)

S. 232 and Dravo Contracting Company, 302 U. S. 134. In these cases the Supreme Court held that contractors who perform work or make contracts to carry on functions of the Federal Government are immune from taxing by a state in which they are not residents or voters.

Considerable discussion has arisen from time to time over the legal question: If a state law exempts from taxation goods in "dead" storage, what services can be performed on the goods by the warehouseman or purchaser without subjecting the goods to state taxation? This question was clearly answered by a higher court in the late case of General Cigar Company, Inc. v. Peck, 111 N. E. (2d) 265. In this case a state law was litigated which provides that merchandise belonging to a non-resident shall not be considered to be "used in business" in state, and is not subject to personal property tax, if it is held in a storage warehouse for storage only. This court held that this law is not applicable to merchandise on which essential steps in manufacturing or processing are carried on during the storage, but it is applicable where nothing is done in connection with the storage except what is necessary for preservation of the stored merchandise. The court said:

"Some precaution is required for the preservation of various commodities."

This court explained that services to preserve stored goods may

(*Please turn to page* 266)

GLASS CYLINDERS
RODS • TUBES
CIRCLES & SPECIAL SHAPES
FABRICATED and CUT
to
YOUR SPECIFICATIONS
Your Inquiries Invited

Glass Tubes and Rods for Scientific Use—Lamps, Furniture, Lighting & Decorative Fixtures—Display Domes—Contract Cutters of Tube and Rod.

CRYSTAL GLASS TUBE & CYLINDER CO.
7318 South Chicago Ave.
Chicago 19, Ill.

For More Information Circle No. 297 on Inquiry Card—Page 17

Radio's MASTER
OFFICIAL BUYING GUIDE OF THE INDUSTRY
Radio's MASTER
1440 page MASTER
for everything in Electronics
Make rapid selections from one industry-wide MASTER CATALOG complete with SPECIFICATIONS, ILLUSTRATIONS, DESCRIPTIONS, DIAGRAMS, PRICES on thousands of Radio-TV-Electronic parts and equipment.
NEW! 1955 BUYING GUIDE
List $6.50
As low as $1.95
• Over 85,000 • Fully Indexed items
• 8½" x 11"
• Over 8,500 illus.
• Weighs 6 lbs.
From leading parts distributors or write to:
UNITED CATALOG PUBLISHERS, INC.
110 Lafayette Street, New York 13, N. Y.
1440 pgs.
Fully catalogs Radio-TV-Electronic parts & equipment: Tubes, Transmitters, Test Equipment, Comm. Receivers, Transformers, Capacitors, Antennas, Resistors, Coils & Relays, Recording & PA Systems, Hardware, Tools, etc. etc. OFFICIAL BUYING GUIDE OF THE INDUSTRY

For More Information Circle No. 298 on Inquiry Card—Page 17

with a FEATHERWEIGHT feel!

The finished castings for this new product have a uniform, tight grain with a good enameling surface. In fact, the manufacturer, Prizer-Painter Stove Works, Inc., of Reading, Pa., is able to apply enamel directly to the cast surface, eliminating the need for a base coat. Prizer-Ware is strong and durable. Yet, it is only one-tenth of an inch thick.

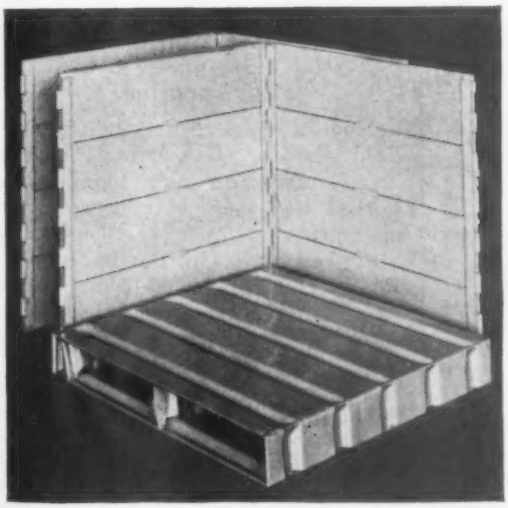
Casting requirements called for an extremely fluid, clean pig iron with no porosity. A Republic pig iron metallurgist was called in to work with Prizer personnel. He recommended the proper grade of pig iron without hesitation or prejudice—because Republic is the only producer of all grades of merchant pig iron.

Close cooperation between customer and the Republic pig iron metallurgist is not unusual. Why not make it a practice to call him in whenever you need help? There is no cost or obligation.

You can handle heavy castings easily with Republic Chain Slings. Fabricated from Republic Alloy Steels, their high strength—low weight ratio—provides an exceptionally high degree of safety. Republic Chain Slings are made in any length to meet your requirements. All are proof tested and warranted to meet or exceed specifications.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products



Collaps-a-tainer, the steel box that folds flat, can reduce your cost of interplant shipping. Have your traffic manager figure your cost of returning empty containers. Then compare with savings possible from using the Collaps-a-tainer. Four collapsed units ship in the space of one open unit. It's easy to assemble, lightweight, strong and durable and easy to knock down. Collaps-a-tainer can also be used on the production line or as a storage bin. It stacks to any practical height. Standard size, 30″ x 30″ x 30″, weighs approximately 100 pounds.

To help improve foundry efficiency and economy during molding, moving, storing and shipping operations, Republic makes a complete line of steel boxes, skids, pallets and flasks. They are built to your specific requirements. Republic Pallet Racks and Steel Shelving provide additional space-saving economy—help simplify your handling problems.

REPUBLIC STEEL CORPORATION
3126 East 45th Street • Cleveland 27, Ohio

Please send me literature on:

☐ Chain Slings ☐ Boxes, Skids, Pallets ☐ Collaps-A-Tainer
☐ Pallet Racks, Shelving ☐ Have a Pig Iron Metallurgist Call.

Name_____ Title_____

Company _____

Address _____

City_____ Zone____ State_____

REPUBLIC STEEL

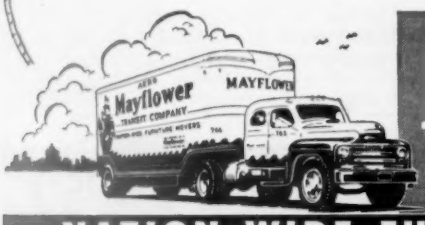
For More Information Circle No. 300 on Inquiry Card—Page 17

Ride 'em Cowboy

▶ It takes a trained rider to stay astride a bucking bronco . . . and it takes a trained, experienced van operator to move your furniture safely from one city to another. Mayflower van operators are selected on the basis of scientific aptitude tests. They are thoroughly trained in Mayflower's own moving school . . . and, they drive the best equipment that money can buy. For a move that's easy for you and safe for the furniture, use Mayflower Moving Service.

AERO MAYFLOWER TRANSIT CO., INC. • INDIANAPOLIS

Mayflower's organization of selected warehouse agents provides on-the-spot representation at the most points in the United States and Canada. Your local Mayflower agent is listed in the classified section of your telephone directory.



AERO Mayflower

America's Finest

NATION-WIDE FURNITURE MOVERS

For More Information Circle No. 301 on Inquiry Card—Page 17

Price Laws

(*Continued from page 262*)

be done by the purchaser or warehouseman as follows: The sprinkling of stored food merchandise to prevent drying and consequent wrinkling; maintaining correct temperatures for wearing apparel, particularly furs and other merchandise; movement of certain merchandise such as paint and other liquids which require some movement during storage to prevent deterioration.

For comparison, see Mead Corporation, v. Tax Commissioner, 93 N. E. (2d) 19. The facts in this case are as follows: The Mead Corporation is engaged in the manufacture of white paper from wood, and its method of operation involved the bringing of logs to a storage place and storing them for a long time for seasoning. After sufficient seasoning so that the logs could be used to manufacture paper, the logs are prepared for what is known as the "chipper". This process reduces the logs to small pieces capable of being transformed into pulp.

In this case the court held that as soon as the logs are received by the chipper they are "out of storage" and subject to taxation. Hence, with respect to stored goods being exempt from taxation, the exemption ceases immediately when the merchandise is removed from storage for processing or other purpose not directly connected with preservation of the goods while in storage.

Use Taxation

Modern higher courts consistently hold that a state cannot collect "use" taxes on equipment purchased and used to process merchandise.

For example, in Rawls, Inc. v. Peck, 111 N. E. (2d) 916, the testimony disclosed these interesting facts: A company purchased equipment and parts for retreading and recapping motor vehicle tires. The Tax Commissioner of the state imposed a "use" tax on the purchase of this equipment. The purchaser appealed to the higher court on the contention that the equipment was not subject to a "use" tax because it was used for re-processing worn or damaged tires—removing the outside tread material down to the casing then applying cement to the prepared surface and placing on the casing a strip of rubber of the proper length which forms a new crown on the tire. The tire is then placed

(*Please turn to page 270*)

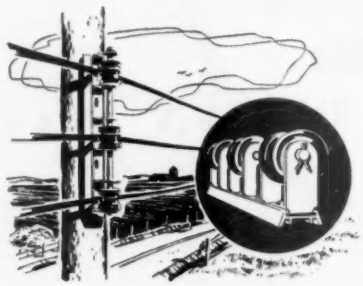
For More Information Circle No. 302 on Inquiry Card—Page 17→

The Answer to Cost Problems
T AND W DEEP DRAWN STAMPINGS
Are you, too, facing constantly mounting material and labor costs? You may find substantial economies in production by redesigning to use light-weight, easy-to-assemble T & W Deep Drawn Stampings.
Transue & Williams
ALLIANCE, OHIO
Designers and Makers of Deep Drawn Stampings
Sales Offices: New York, Philadelphia, Chicago, Detroit, Indianapolis, Cleveland

BUSINESS IN MOTION

To our Colleagues in American Business ...

This is called a rack. It is fastened to electric light poles to hold wires from pole to pole, and from pole to house. Perhaps you may have noticed racks on poles, but unless your electric company has recently replaced them on the lines in your vicinity you have not seen anything quite like this. It is made of aluminum, instead of galvanized steel, and is assembled almost entirely of extruded shapes.



Naturally you will think that aluminum was chosen in order to save weight, and as a matter of fact, lightness plus strength is a factor. The aluminum rack is five to six pounds lighter, and that is appreciated by the linemen who have to put the rack on the pole after they have climbed it. However, lightness is not the main consideration. Long life is the big advantage. Modern methods of treating poles with preservatives make it reasonable to assume that a pole will last for 50 to 60 years. Now for the first time there is a rack or bracket, as it is sometimes called, that should outlast the pole. As soon as aluminum is exposed to the air, a thin film of oxide forms, and this is a protection against further action by air and rain. As for price, the aluminum rack costs a little more, but this is compensated, many times over, by the increased years of service.

There are some interesting features of design that are worth noting. The extruded shape that forms the base of the rack is adequately ribbed for strength, and in addition, provides a channel into which the arms are slid after having been notched and bent at right angles. The channel and the arms together take the pull of the wires; the rivets are used just for positioning. Incidentally, the rack has to withstand a total pull of 6,000 pounds. The arms are formed with a slight longitudinal camber or bow and have rounded edges, because linemen pull the wires across them, and the camber and edges protect the insulation from damage. The rod on which the insulators are threaded is extruded aluminum. One final detail, which is not easy to see in the drawing; the bottoms of the base are toothed, to hold to the pole better.

Revere takes especial satisfaction in this new and superior rack, because the Technical Advisory Service, the Mill, and the customer worked so closely together. There was a joint attack on the problem of developing a product that would not only be better, but could be assembled simply and economically. Suppliers to industry are not only well informed regarding their materials, but glad to cooperate with customers and prospects on matters concerning specification and fabrication. Revere suggests that you call upon your suppliers not only to fill orders, but to place their skill and knowledge at the disposal of your designers and production people.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N.Y.

Price Laws

(*Continued from page* 266)

in the equipment for completion of the recapping process.

It is interesting to observe that the higher court held that the equipment is used and consumed directly in the production of "tangible personal property" for sale "by processing" so that such equipment is not subject to the use tax of the state. In this respect the court said:

"The Supreme Court will not disturb as unreasonable or unlawful a decision of the Board of Tax Appeals that certain tools and equipment employed by a "consumer" in retreading, recapping and relugging rubber tires for its customers at a price, are used and consumed directly in the production of tangible personal property for sale by processing, and that the sale of such tools and equipment is not subject to the tax, where it appears that the operations in which such tools and equipment are applied produce articles by a means which comes within standard and accepted definitions of the term, 'processing'."

Interstate Taxation is Void

According to a late higher court decision no taxation by a state on interstate business is valid.

For example, in Spector Service, Inc. v. O'Connor, 71 S. C. Reporter, 508, the testimony showed that a state passed a tax law which levied a "business tax" on the franchises of foreign corporations engaged in interstate business.

The Supreme Court held the state law invalid although the tax is computed at a nondiscriminatory rate on that part of the corporation's net income which is attributable to its business activities within the state.

This was so although the state officials argued that the taxed business was not interstate commerce. This court held that doubts of taxation will be decided in favor of the taxpayer.

For comparison see Groco Income Tax Division, v. Klink, 112 N. E. (2d) 581. Here the higher court held that in view of the doubtful meanings of two state statutes, the taxpayer has benefit of the doubt, and said:

"In case of doubt the statute will be construed against the state and in favor of the taxpayer. This rule is equally binding upon us when the question presented is on the rate of tax. In such a situation if there is a doubt, it must be resolved in favor of the taxpayer."

For More Information Circle No. 305 on Inquiry Card—Page 17

Waterbury's arithmetic gives

TOTAL SATISFACTION FOR YOUR

Phosphor Bronze

REQUIREMENTS

IN SHEET • STRIP • COILS

+

+

+

This simple arithmetic gives you the right answer in phosphor bronze. It adds up four good reasons for contacting Waterbury Rolling Mills on your next sheet or strip order.

1. **QUALITY** — Selected raw materials, metallurgical laboratory control protect and maintain the quality of every shipment.
2. **ATTENTION** — Waterbury's flexible facilities and simplified organization make it possible to give every order identical attention and close follow-up.
3. **ASSISTANCE** — Waterbury's metallurgical experience and knowledge is available to help you on specific problems.
4. **DELIVERY** — Close follow-up, simplified production control, more compact facilities expedite quick shipments.

You can order Waterbury Rolling Mills phosphor bronze from the office nearest you.

WATERBURY ROLLING MILLS, INC.

Established 1906

Main Office: Waterbury, Conn. • Tel. Plaza 4-5131

New York City Area Rep.: J. A. Wilson Metal Products Co., 350 Madison Ave. • VAnderbilt 6-1246
Chicago Representative: General Steel Warehouse Co., Inc., 1830 N. Kostner Ave. • BElmont 5-4266
Philadelphia Area Representative: John McNichol, 16 West Mill Rd., Flourtown, Pa. • WHitemarsh 8-1869

WATERBURY ROLLING MILLS INC. • WATERBURY CONNECTICUT •

WT-1

ALSO NICKEL SILVER AND OTHER NON-FERROUS ALLOYS

For More Information Circle No. 306 on Inquiry Card—Page 17

Every day is Saturday...

at Belmont!

If our ingots were infantrymen, they'd blow their tops! For every day—and all day—is inspection day at Belmont.

Not a single drop, square, stick, grain or ingot "gets by" the critical eye of Belmont metal experts in anything short of perfect condition...at any stage of production.

And Belmont quality is exceeded *only* by Belmont service—the result of 59 years of "falling in" on time.

Better buy Belmont...for both!

Belmont

SMELTING & REFINING WORKS, INC.

309 BELMONT AVENUE • BROOKLYN 7, NEW YORK

"Putting Mettle into Metals Since 1896"

For More Information Circle No. 307 on Inquiry Card—Page 17

Non-Signers' Rights

(*Continued from page* 113)

stitutionality of these provisions;

"At least thirteen state courts of last resort have held the statutes consistent with due process of law. The highest courts of Michigan, Florida and Georgia have held otherwise. The acts are sustained as a reasonable exercise of the police power designed to protect manufacturers' good will inhering in a trade-mark or brand and to cure or lessen the evils believed to flow from price cutting of trade-marked products."

A few months before these decisions by the New York and Delaware courts another action involving these provisions of the fair trade laws of that state, came before the Federal District Court in Arkansas. In that instance a fair trade agreement had been made by the manufacturer of an anti-freeze solution with wholesale distributors, but in disregard of a notice of the established retail price of this product a non-signing retailer continued price cutting in the retailing of this product.

The non-signer provision of the statute of that state is; "Wilfully and knowingly advertising, offering for sale or selling any commodity at less than the price stipulated in any contract entered into pursuant to the provisions of this act, whether the person so advertising, offering for sale or selling is or is not a party to such a contract, is unfair competition and is actionable at the suit of the person damaged thereby."

Pick Your Own Precedent

The contentions of the non-signer in its opposition to the application by the producer and trade-mark owner of this anti-freeze solution for an injunction, were that the statute violated the Arkansas constitution and that as it was adopted before the enactment of the McGuire Act it was invalid at the time of its enactment and that the subsequent passage of this statute by Congress did not subsequently endow it with validity.

"If we were compelled at this time to decide this question," said the Federal Court, "we would probably be constrained to agree with the non-signer with respect to both of these objections. While the Supreme Court of Arkansas has never been called upon to determine the constitutional validity of this or any other section of the Fair Trade Act, it has had occasion in two instances to pass upon the validity of other price fixing statutes under the Arkansas constitution and in both of these cases it has used language which leads us to the almost irresistable conclusion that if and when it is called upon to determine the validity of the law as applied to a non-signer it will hold that it violates the Arkansas Constitution.

"With regard to the contention that the initial invalidity of the Arkansas statute had not been cured by the passage of the federal statutes, it appears that there are no cases in point. The retailer however cites a Georgia decision, which is in point and which supports said contention. The trade-mark owner on the other hand cites a New Jersey decision which is likewise in point and which holds contrary.

"Were we required to choose at this time between these two decisions we should probably follow that of the Supreme Court of Georgia as being to our mind the better reasoned of the two and the one which we think the Supreme Court of Arkansas would probably follow."

In the decision by the Georgia Supreme Court to which the Federal Court referred it was said: "Georgia's Fair Trade Act offends our constitution which provides that no person shall be deprived of life, liberty or property except by due process of law." This is supplemented by a decision of that same court two years before, that, "The right to contract and for the seller and purchaser to agree upon a price, is a property right protected by the due process clause of our constitution and unless it is a business 'affected with a public interest,' the General Assembly is without authority to abridge that right."

The Public Interest

A non-signer provision of the Michigan Fair Trade Laws, substantially identical to others throughout the country, makes the sale by a non-signer of a trade-marked article subject to a price fixing agreement, unfair competition and ground for damages and an injunction at the instance of the trade-mark owner.

The Supreme Court of that state in April, 1954, in holding this non-signer provision unconstitutional, referred to a decision of that same court two years before in which it then had held of such a statutory provision;

"The consideration of whether the price fixing be vertical, horizontal or even diagonal, is of no conse-

(*Please turn to page* 274)

For More Information Circle No. 308 on Inquiry Card—Page 17→

FOR JOBS THAT ARE . . .

Hard

and in a

Hurry

think of H&H Tube

For almost a quarter of a century, H & H has been more than just a firm name, the designation for one of America's leading brass and copper tubing mills. H & H has also stood for quality, for service and for savings—especially when the fabrication of some part, or other precision work, was unusually *difficult*, and *wanted in a hurry*. That is why, when you next see the name H & H, let it not only remind you of one of America's best known names in tubing, but let it also suggest to you this invitation: when the job is *hard*—and *wanted in a special hurry*—your best bet is H & H Tube.

Originators and Sole Makers of METALFLO Tubing

Expect the BEST brass and copper products from

H & H Tube

AND MANUFACTURING COMPANY

269 N. Forman Avenue, Detroit 17, Michigan • Offices from Coast to Coast

METALFLO LOCASEAM COIL STRIP AND SEAMLESS TUBING TUBULAR PARTS

WHERE IS YOUR NAME?

If this copy of PURCHASING Magazine was not addressed to you, where on the routing slip are you? Second? Fifth? Eleventh?

News, ideas, trends, products . . . are all necessary tools to you in the effective performance of your purchasing duties. Because PURCHASING Magazine is the outstanding source of this helpful information, you should have immediate access to its contents. While waiting for a copy to pass from hand to hand down the line to you, you may miss an idea that could possibly mean a great deal to you.

Put yourself on top of the list with a personal copy of PURCHASING Magazine. Order your own subscription now . . . and be assured of unlimited opportunity to completely digest the articles in each issue—articles specifically written to help you and your company.

Use the handy subscription order blank enclosed in this issue—or clip the coupon below . . . and mail to

Mark Stone
PURCHASING MAGAZINE
205 E. 42nd Street
New York 17, N. Y.

The yearly rate is $4.00—for which you will be invoiced later. It's really a small investment for the advancement of yourself and your career.

Purchasing Magazine 1/55
205 E. 42nd Street
New York 17, N. Y.

I would like my own, personal copy of Purchasing. You may bill me for
$4.00 for one year

NAME .....
TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....

Non-Signers' Rights

(*Continued from page 272*)

quence in determining whether the statute in question bears any reasonable relation to public health, morals or general welfare. Neither is any relevancy to be found in the interesting contemplation of whether the competition which most benefits the public is that between rival producers or between retailers of the same product.

"If the act does not bear the mentioned relationship it cannot be sustained as a lawful exercise of the state's police power; impairment of the non-signers' rights under the due process clause results from its enforcement and it is our duty to deny such enforcement and brand the act for what it is, unconstitutional."

Price-Fixing Device

This Michigan decision was preceded by less than a month by a similar decision by the Florida courts that adds to the poet's "confusion worse confounded".

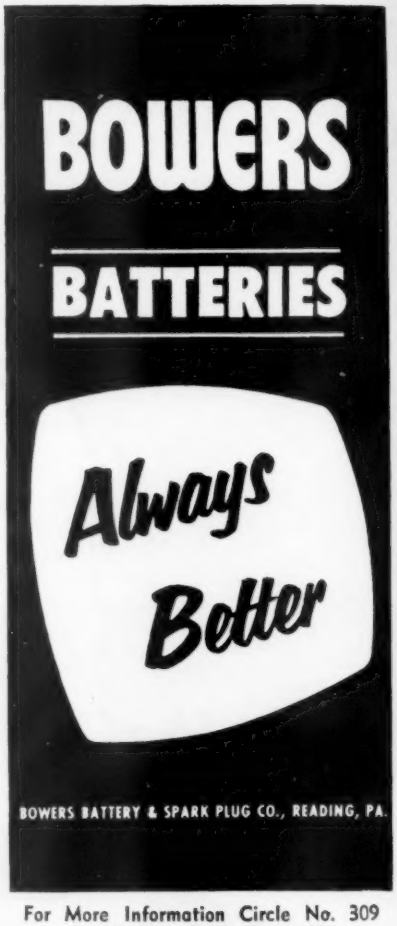
"We are conscious of the fact that the fair trade laws have been passed in all the states except Texas, Vermont, Missouri and the District of Columbia, and that the acts have repeatedly been held constitutional by various state courts.

"This court has consistently and unequivocally rejected on constitutional grounds both the underlying theory and the economic facts on which they are sought to be predicated.

"The real effect of the non-signer clause is anti-competitive price fixing; not the protecting of the good will of trade-marked products, as other courts have held. Good will, it has been said, should be determined by the price which the goods can command in the competitive market and not by the ability of the manufacturer to sell at a pegged retail price which he himself selects.

"Except in times of economic emergency such inflexible price arrangements which the act sanctions, are not in line with our traditional concepts of free competition which have traditionally been the 'yard stick' for the protection of the consuming public.

"The real vice of the non-signer clause is the absence of that standard. In removing the said standard the non-signer clause must fall as an invalid use of the police power for a private, not a public use."



For More Information Circle No. 309 on Inquiry Card—Page 17

$100,000,000.00
INDUSTRIAL AND GOVERNMENT SURPLUS
EVERY CATAGORY OF MERCHANDISE FOR SALE
at a fraction of original cost
at
Fourth Annual
TRADE SHOW AND CONVENTION
of
Institute of Surplus Dealers, Inc.
FEBRUARY 20, 21, 22, 1955
212 AAA Armory
62nd. St. & Columbus Ave.
New York City, N. Y.
A Few Booths Still Available
For information
Write, Wire or Phone inquiries to:
Institute of Surplus Dealers
673 Broadway, New York City, N.Y.
Algonquin 4-4638

For More Information Circle No. 310 on Inquiry Card—Page 17

Standards and Purchasing

(*Continued from page 98*)

is always the decision as to the most effective and practicable method of organization and procedure for determining what standards are to be used and seeing that they are observed. There is no one answer. A great deal of experience has been reported and exchanged, that is proving very helpful in changing the status of standardization from principle to practice.

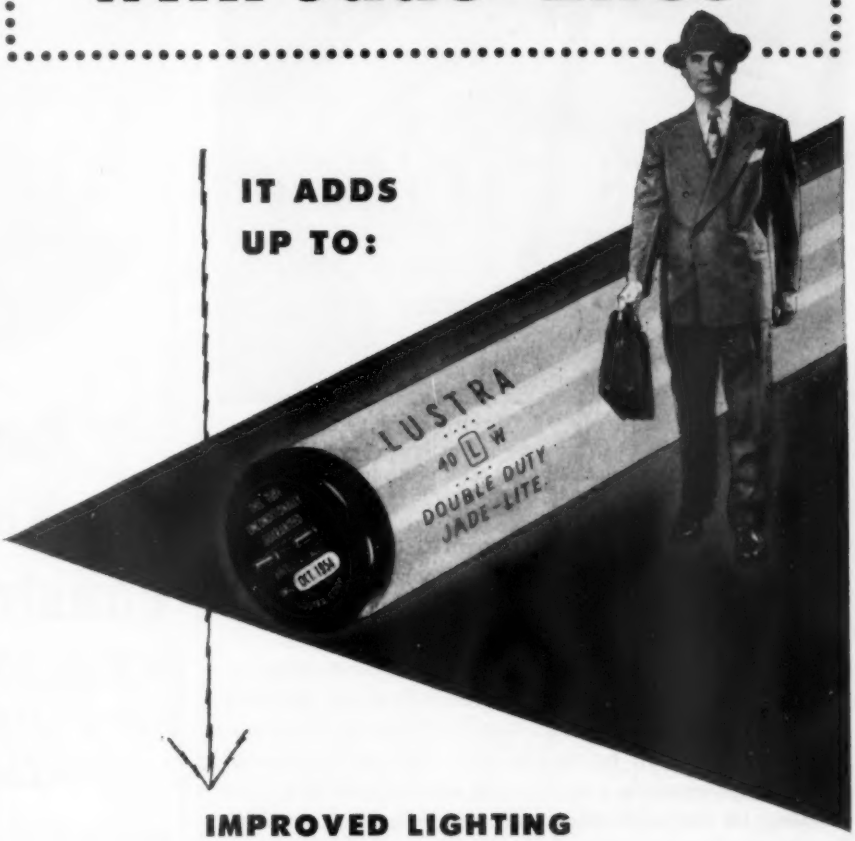
The recommended method of establishing a committee on standards, with varying degrees of formal organization, according to circumstances, has fairly wide acceptance, particularly among the larger companies. The periodic review of specifications, giving due attention to standards in the process, is another useful method.

An approach that is more directly related to the purchasing operation, is the establishment of stock lists or catalogs enumerating the specific items to be carried in the stores department. Compilation of this list, in the light of engineering and plant needs, affords a broad opportunity for putting standardization to work, and subsequent additions or revisions immediately raise the question of standards. The list itself constitutes a working standards program. Product design, manufacturing and maintenance practices are keyed to it. Any deviations in the way of requests for non-stock items automatically require a justification for such departure from standard practice.

Still another approach, less systematic yet highly effective, is exemplified by the value analysis of individual products of parts as they come up for purchase, frequently resulting in the adoption of standard items in place of the "specials" formerly used.

The purchasing agent's part in a company standardization program is a recommending and coordinating role. Recommendations are good, but they may be disregarded. A great deal depends on how the subject is presented. More and more purchasing agents are learning to put it this way, when an opportunity for standardization arises: they ask, "Why are you *not* using the standard?" Sometimes there is a good reason, but in many cases it is hard to find a sensible answer to this very sensible question. Whenever that happens, standardization advances another step in the right direction.

MORE SEE-ABILITY with Jade-Lites



IMPROVED LIGHTING EFFICIENCY with Lustra Jade-Lite Fluorescent Tubes because of—

LESS GLARE, which in turn—

ELIMINATES EYESTRAIN

in close, critical work areas, with the result that—

PRODUCTION IS STEPPED UP SUBSTANTIALLY!

Your local Lustra Man, a Lighting Specialist, is equipped to prove these statements—to help your organization up production and increase profits. For information, write **Lustra Corp., Dept. P-1, 111 Water St., Brooklyn 1 N.Y.**

Lustra

AMERICA'S DATED LAMPS

For More Information Circle No. 315 on Inquiry Card—Page 17

This "free" file-folder kit will show you...

How to modernize your shipping operations

NOTHING LIKE IT EVER BEFORE! Not a catalog of products, but a file-folder of systems created to streamline shipment addressing and marking, and simplify shipping paperwork.

Cost-conscious firms have discovered that the key to efficient shipping and packaging operation is a fast, low-cost system for addressing and marking containers. That's exactly what this File-Folder Kit is about.

Described and illustrated are systems that make shipment addressing and product identification marking faster, cheaper and more accurate. You'll see how addressing operations can be tied-in with the preparation of shipping paperwork, and how the entire chain of events leading to the addressing and marking of your shipments can be streamlined. And there are also product samples that you can try out!

Never before has so much factual information been offered on this important subject—and it's all yours without charge or obligation. Make sure you get your Weber Label and Marking Systems File-Folder Kit right away!

Weber label and marking systems

Division of Weber Addressing Machine Co.
Mount Prospect, Ill.
Phone: CLearbrook 3-2405

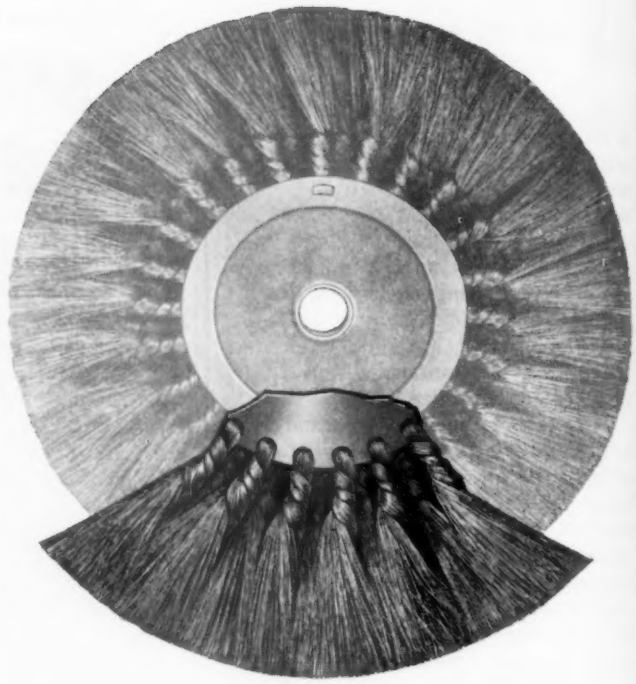
Weber Label and Marking Systems
Dept. 5-A, Mount Prospect, Illinois

☐ Please send me a Label and Marking Systems File-Folder Kit.

☐ Also, we would like to talk to your representative as soon as possible about improving our shipment addressing and marking operations, and simplifying our paperwork.

Company_____
Individual_____ Title_____
Address_____
City_____ Zone____ State_____

For More Information Circle No. 316 on Inquiry Card—Page 17



How Pittsburgh knotted brush construction provides

- *Better Balance*
- *Uniform wear*
- *Better cleaning*
- *Longer equipment life*

Because of their construction, Pittsburgh "Lightning" knotted sections have *exactly the same number of wires in every knot.* As a result, you get a brush with perfect balance—one that will wear uniformly and cause less bearing—destroying vibration in the machine that drives it!

What's more, the special type of wire used in these knots is the fastest cutting, with the longest life, that can be produced. Built for the toughest applications, "Lightning" brushes are perfect for cleaning welds, removing scale or rubber, or cleaning parts where penetration brushing is needed.

This is just one example of superior Pittsburgh construction, engineered for both general and specific applications. For details of the complete line, write for free Catalog No. 54-W. Address: PITTSBURGH PLATE GLASS Co., *Brush Division,* Dept. L-1, 3221 Frederick Ave., Baltimore 29, Maryland.

PITTSBURGH *Power Driven* **BRUSHES**

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

For More Information Circle No. 317 on Inquiry Card—Page 17

Resist mushrooming and wear

—get longer runs at lower cost

with tough AMPCO-WELD* *Resistance-welding Tips*

THESE are the tips that cut costs on your resistance-welding line. Here's why: Ampco-Weld tips are made of durable Ampco alloys, have excellent resistance to mushrooming and wear. High electrical conductivity means they stay cooler — don't slow the job by sticking to the work. They need fewer dressings — give better welds without frequent shutdowns.

All Ampco-Weld products meet RWMA specifications. Cut downtime and get a better product from your resistance-welding line. Order Ampco Tips today. *Reg. U. S. Pat. Off.

Ampco Metal, Inc.
Dept. P-1
MILWAUKEE 46, WISCONSIN
West Coast Plant
Burbank, California

AMPCO ®

RW-12

For More Information Circle No. 324 on Inquiry Card—Page 17

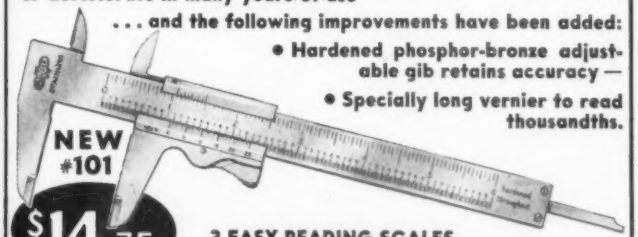
The Genuine MAUSER VERNIER CALIPER

NOW MADE OF STAINLESS STEEL THROUGHOUT

The fine finish will not tarnish or deteriorate in many years of use —

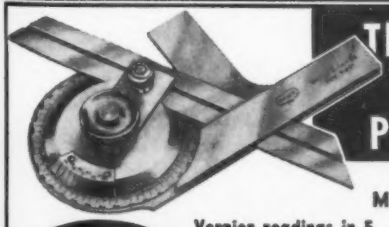
. . . and the following improvements have been added:

- **Hardened phosphor-bronze adjustable gib retains accuracy —**
- **Specially long vernier to read thousandths.**



$14.75 Postpaid

3 EASY READING SCALES
1/1000" - 1/128" - 1/10 mm in back



The New MAUSER BEVEL PROTRACTOR

For Layout and Measuring Angles

$20.00 With 6" Blade

Vernier readings in 5 minutes of arc. The dial is graduated in degrees for the full circle of 360°.

Request Illustrated Folder—code: GIOZE—showing complete line of MAUSER Toolmakers Calipers, Height Gages, Tool Stands, etc. . .

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200 PU LAFAYETTE STREET • NEW YORK 12, N.Y.

For More Information Circle No. 325 on Inquiry Card—Page 17

MEYERCORD *Nameplate* DECALS Help Consumers USE Your Product Correctly

Meyercord Nameplate Decals on your product promote proper use by the consumer. Use Meyercord Decal Nameplates for operating instructions, safety signs and warnings, indicators and guides, lubrication charts, dial and gauge markings, and wiring diagrams. Meyercord Dealer nameplates refer the user back to the dealer for parts and replacement. Meyercord Decals are individually engineered for quick, easy application to any commercial surface, without change in your present assembly line, for long or short production runs . . . at astonishingly small cost per unit. Permanently secured, Meyercord Decal Nameplates can be designed to withstand extreme temperatures, abrasion, wear or any unusual condition.

Let a Meyercord Decal engineer show you how to get maximum consumer use for your product through application of informative, instructional decals. He'll study your product and make specific recommendations . . . without obligation . . . as another Meyercord service to industry.

FREE! "MARK-IT" MANUAL OF DECAL NAMEPLATES

Send today, on your company letterhead, for this valuable full-color guide to every industrial problem in marking, identification, instruction, and information. Gives you hundreds of new ideas for the application of decals to your products.

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. C-302 5323 WEST LAKE STREET • CHICAGO 44, ILLINOIS

For More Information Circle No. 326 on Inquiry Card—Page 17

LETTERS . . .

REQUIRED READING

We do not know how many government purchasing offices subscribe to PURCHASING. The Purchasing Division at this arsenal does, and we use it. No copies are destroyed. They are saved and referred to time and again.

Raritan Arsenal is what is known as a Principal Procurement Office for the Ordnance Corps. Our national procurement mission includes some 35,000 semi-commercial hardware items and several hundred chemical compounds. There is no question in our mind regarding the benefits derived by our personnel from articles in PURCHASING. It is our belief that a better acquaintance between industrial purchasing executives and their methods and those used by large purchasing offices such as ours would be mutually helpful.

J. D. B. Noel,
Lt. Col., Ordnance Corps
Raritan Arsenal
Metuchen, N. J.

CONTRACT CLAUSES

Congratulations on your fine editorial in the November issue, entitled "Watch Those Contract Clauses." I like everything you say except the last sentence wherein you refer to "a simple purchase order form that sets forth the elements of the agreement in clear type, and on one side of the sheet."

I am enclosing a copy of the Rockwell purchase order. This form is standard throughout all our divisions and subsidiaries in regard to format and the "Conditions of Purchase Order", which consist of fifteen clauses printed on the back of the original purchase order and the acknowledgment copy only. I believe that the conditions on the back of the Rockwell purchase order are fair to both the vendor and to Rockwell, and I know that we give the vendor more leeway than do some companies.

I would welcome a change that would make it unnecessary to have printing on the reverse side, if I could feel that it would do the job.

C. Warner McVicar
Dir., Purchasing & Traffic
Rockwell Mfg. Co.
Pittsburgh, Pa.

OLDEST MANUAL?

Browsing through some back numbers of PURCHASING, I came across the discussion in the June 1954 issue concerning the oldest purchasing manual. If you check, I think you will find one written around 1914 for the Canadian National Railways by W. Richmond Smith. Russ Forbes appointed Mr. Smith as Deputy Commissioner of Purchase (New York City) in January 1934. At that time he was known as the "Father of Centralized Purchasing" because of his Canadian job of pioneering.

Albert Pleydell
Albert Pleydell Associates
New York, N.Y.

SIMPLE MANUALS—PRO AND CON

I have just finished reading the article in the November issue entitled "Write A Manual That Will Be Used." For the life of me, I cannot understand why this article was selected for publication unless it was to be used as a guide for classes to be conducted in writing for publication. Everything in it is applicable to any type of instruction manual, and not just peculiar to the preparation of a Purchasing Manual.

Perhaps I am prejudiced in my criticism because I spent many months writing and rewriting the manual I used in my operations. As one who has spent over 30 years in purchasing work, I see nothing but a lesson in English Composition in this article.

W. K.
Brooklyn, N.Y.

You will be pleased to know that I am getting three and four letters a day regarding my article "Write A Manual That Will Be Used." The letters started coming from New York and New Jersey several days before I received my copy of the magazine. All of them are very complimentary and request copies of our Purchasing Manual. We have already had to print more copies of the manual to fill the requests. We are happy to do this and appreciate the fine publicity we are getting.

All letters I have received to date (November 12) have been from the northern and eastern states that evidently get the magazine earlier than we do. They are coming in from places like General Electric Company, Sylvania Electric Products, Keyes Fibre Company, Princeton University, Montefiore Hospital, Cleveland Quarries Company, and Washington Suburban Sanitary Commission.

I have written a number of magazine articles, but I have never received anything like the response I am getting from this one.

Roy Saye, Pur. Agt.
Mississippi State College
State College, Miss.

I have just completed reading the November issue of PURCHASING, and must say I believe it is the best yet—or perhaps it is just that each and every article seemed to have a particular interest to me. In fact, it is because of these exceptional articles that I am writing to request several copies of the article "How to Write a Manual that Will Be Used".

Jack Barnum, Pur. Agt.
W. W. Barnum & Son
Niagara Falls, N.Y.

At present I am working on a Purchasing Manual for our company, and I find very timely and interesting the article "A Basic Approach to Purchasing Procedure" in the October issue and "How to Write a Manual that Will Be Used" in the November issue. Again I want to compliment you on your splendid publication with its many informative articles.

W. M. McBee, Pur. Agt.
Helipot Corporation
S. Pasadena, Cal.

I noticed the article "How to Write a Manual that Will Be Used" in your November issue. Could you recommend more extensive literature on the subject?

J. A. O'Neill, Dir. of Pur.
Tupper Corporation
Farnumsville, Mass.

AUTHOR

I read with interest the article "How to Determine Safe Ordering Point" in the November issue, by L. J. Murphy. May I have the address of the author?

A. J. Cook
Oak Ridge Nat. Laboratory
Oak Ridge, Tenn.

• 1711 Popham Ave., Bronx 53, N.Y.

NEW TEXTBOOK

The reason why I allow myself to contact you is that some articles by the undermentioned authors in your periodical should be referred to in a Swedish purchase book, which will be published in the beginning of 1955. I am sorry that I have lost my own copies and it has not been possible for me to get the exact titles of the articles in question. It should be of very great value if I could get your information by return of post.

Hans Lindqvist
Stockholm, Sweden